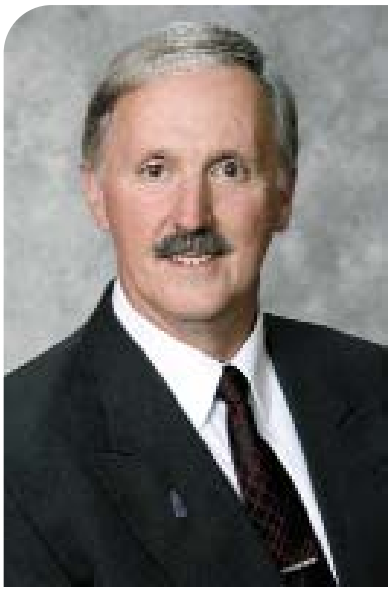
Impulse

College of Engineering
South Dakota State University
Spring 2012



Dear **ALUMNI AND FRIENDS,**

As this issue reaches you, we are completing a truly historic year for SDSU and the College of Engineering! This issue includes many interesting articles and news that will show you why 2011-2012 has been another exceptional year for our students and institution.

In this issue you will learn that last December we made history by conducting the very first College of Engineering commencement exercise. It was most enjoyable, and we received unanimous support for continuing the practice each December.

You will also learn that some of our longtime serving faculty members are retiring, including Delvin DeBoer, professor in civil and environmental engineering. Although he is retiring from SDSU, he is not retiring from his water and environmental engineering work.

You will also read about some of our academic program changes as the result of our large base budget cuts this year.

History was made November 10, 2011, when we formally installed our first endowed professorship in the College of Engineering. Read about David Galipeau being appointed the Harold C. Hohbach Endowed Professor of Electrical Engineering.

As part of internal reorganization of the College of Engineering in 2010-2011, the new Office of Research was formed, and Dennis Helder was named associate dean for research. We include an article in this issue to update you on the role of this new office and its impact on advancing research in the College of Engineering.

Some of our readers have phoned our alums for the annual Engineering Phonathon. Whether you are a former caller yourself or one of our generous alums who has received the Phonathon calls, I'm sure you will enjoy the feature article in this issue.

Some of our readers may have also been involved with the Joint Engineering Council student organization. In this issue you can read about this group of highly motivated student leaders which contributes so much to our College of Engineering outreach activities.

Of course, we always have feature stories that describe many of our award-winning students and faculty, and this issue is no exception. I'm sure you will enjoy them!

We also include several stories featuring our alumni in this issue. A particular highlight is the article featuring our 2012 Distinguished Engineers: Dale Jans (BS CE 1974), Beth Kaspar (BS EE 1980) and Curtis Brudos (BS EE 1958).

I want to thank all of you for your generosity and encourage your continued support of the College of Engineering. If you are not already a member of our Dean's Club, please consider becoming one and help us continue to produce the best graduates in science, technology, engineering and mathematics. Your generous financial support is part of the lifeblood of the College of Engineering.

I hope you enjoy this latest issue and will drop us a line or stop in for a visit if you're in our area. Remember, Jackrabbits are always welcome!

Lewis Brown, Ph.D.
Dean of Engineering

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Impulse

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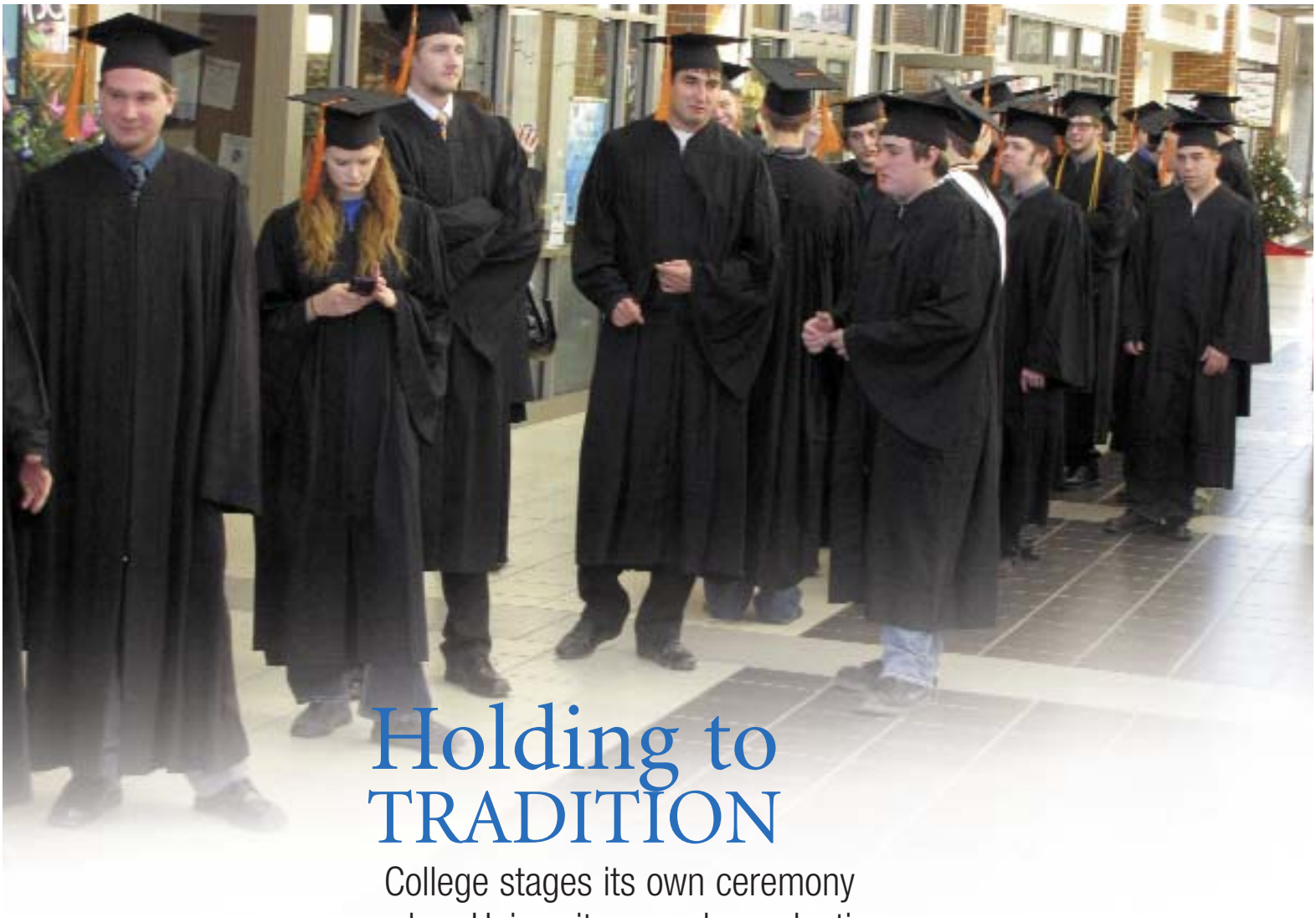
ABOUT THE COVER

Professor Delvin DeBoer, left, and graduate student Andy Lemke discuss operations of the lime-softening solids contact clarifier at the Brookings water plant in February. In June, DeBoer will retire after thirty-three years at the University. See story Page 4.



Holding to TRADITION

College stages its own ceremony when University cancels graduation

The College's winter commencement class congregates in the walkway of the University Student Union prior to the December 10, 2011, ceremony.

Opposite page, from left:
Faculty members applaud the support the graduates' families provided.

Master's degree graduate S.M. Golam Mortuza receives his hood. He was one of two master's graduates to participate in the ceremony.

Civil engineering graduate Chase Cutler chats with his parents, June Witte and Kent Cutler, following the ceremony in the Volstorff Ballroom.

Suppose they didn't give a graduation, but the people came anyway? That unusual paraphrase of the 1936 Carl Sandburg line became reality December 10, 2011, when the College of Engineering was alone in holding a winter commencement for its graduates.

The University cancelled its December ceremony in response to a decision by the 2011 state legislature to cut funding to the higher education system. Students could have walked through with the spring 2011 graduation or waited until this May.

But Dean Lew Brown believed it was important for graduates to have a graduation ceremony when they graduated.

After inquiring, Brown says the University provost would permit each college to conduct its own ceremony. In discussing it with his leadership team, Brown found unanimous support, even though no other college followed Engineering's lead.

"We're just too practical over here" not to have a graduation ceremony, says Brown, who is a 1984 SDSU graduate himself.

Response exceeds expectation

Students were notified of the ceremony in late September and planning carried on throughout the semester. By 10:30 a.m. Saturday, December 10, there were forty undergraduates and two graduate students standing in the University Student Union hallways wearing caps and gowns, waiting for the processional to be played.

There were plenty of family and friends waiting to observe the historic event. In fact, extra chairs needed to be brought in to the west half of the Volstorff Ballroom, where 200 people were initially expected.

Even with the additional required logistics, the ceremony's start was delayed only a few minutes and the ceremony's conclusion came within a half hour.

In those thirty minutes, some 250 people, including a dozen faculty members, saw the hooding of master's degree students, Adam Mathiowetz and S.M. Golam Mortuza, the presentation of diplomas to forty undergraduates, and the recognition of faculty marshals Delvin DeBoer and Howard



Nielsen, who are both retiring at the end of the school year.

What they didn't experience were graduation speeches, the most forgotten part of most commencements.

The prize at the finish line

For Chase Cutler, an honors graduate in civil engineering, that wasn't a problem. But he did appreciate having the ceremony. "It's the cap at the end of the whole thing; the finish line," says Cutler, an Aberdeen Central grad who spent four and one-half years at State.

"It's the thing you look forward to. You would have missed the ceremony. Recognition is always nice," he says.

His mother, June Witte of Sioux Falls, commented that the abbreviated ceremony was more personal than a large, universitywide event. "There's so much hard in the world. When you have a chance to celebrate, you should," she says.

The family may have reason to celebrate again in a couple years. Cutler will pursue his master's at State.

From near and far

No prizes were awarded to the one who traveled the farthest to attend the graduation. But it's hard to imagine anyone beating Judy Paul, who traveled 3,340 miles from Homer, Alaska, to attend the graduation of her niece, mechanical engineering major Christina Gerometta.

Paul attended the ceremony with her brother and sister-in-law Diane and Fred Gerometta, of Farmington Hills, Michigan.

That in itself is a 900-mile trip. "It was worth the trip," says Fred Gerometta, who also made eight trips to Brookings to watch his daughter compete on the SDSU swim team. "When we found out they were going to have a ceremony, we were excited," he says.

Both parents commented on the professionalism of the ceremony, and Paul added that it was one of the best graduations she has attended.

Gerometta could have received her diploma from Brown and headed on to graduate school at State without mom and dad being in the audience, but "it was nice to have them watch me walk across the stage," she says. The family also enjoyed lunch together at a catered meal in the east wing of the Volstorff Ballroom.

A place for family to celebrate

Others partaking in the sandwich buffet, which was sandwiched between graduation and the College's Order of the Engineer ceremony, was the family of Tami Jansma, a civil engineering major from Valley Springs who came to SDSU with an associate degree.

She worked at Clark Engineering in Sioux Falls and carried nearly a full load while attending State and commuting seventy-five miles one-way for four and one-half years.

Because of those extra obstacles, "it is much, much more important to have a ceremony. It makes me feel a lot more appreciated, especially when they go all out and have a buffet luncheon," says Jansma, whose guests included her mother, grandmother, sister, older brother, and two friends.

Jansma says she particularly wanted to participate for her grandmother.

"She likes to see us walk across the stage. I'm the only one in my family to get a bachelor's degree. It's really nice of them to do this for us, even with all the budget cuts.

"I was pretty disappointed" upon learning that the University would not have a winter commencement," Jansma says. "Who wants to come back after you graduate" to participate in a spring ceremony? "I signed up right away" when the College announced its own ceremony.

And Grandma couldn't be prouder of her. "She sticks to it and gets the job done. She's dedicated," Iola Moss says.

The surveys show . . .

Those at the ceremony were asked to complete a survey on their thoughts about the event. The response was overwhelmingly favorable, Brown says.

Perry Doctor, the father of civil engineering graduate Brian Doctor, says, "I think it's very important for students to have a ceremony like this and get the recognition they deserve rather than waiting until a spring ceremony. I think it's a great idea and they should continue it."

That's exactly what the College intends to do, Brown says.

The main cost of the event—the luncheon—was offset by selling tickets in advance. The cost for renting and setting up of the ballroom wasn't much greater than it would be for the College's traditional Order of the Engineer, which is a ceremony that gives engineers the opportunity to pledge an oath to practice their profession with honesty and integrity and receive a stainless steel ring as a symbol of their oath.

"As a College it's important, despite the cost, to help families and loved ones honor and recognize the hard work and milestone accomplishments of our graduates," Brown says.

Dave Graves

Delvin DeBoer, right, watches graduate student Andy Lemke operate a filter control valve at the Brookings water plant in February.

Delvin DeBoer

SDSU, state will miss the water expert

If it hadn't been for some friendly advice, the state of South Dakota would not have benefitted from the person who many call the premier water expert in the region.

Delvin DeBoer, professor of civil and environmental engineering, will retire effective June 21, 2012, after thirty-eight years with the College.

"Delvin has been a champion of the rural water system model that addresses the drinking water needs of small communities as well as farmers and ranchers," cites Jim Auen, operations manager of the Lewis & Clark Regional Water System.

"He has been very helpful in his technical assistance to rural water systems and the many challenges that we face from the nature of our many miles of pipeline distribution systems. He has been particularly instrumental in researching and providing solutions to the challenges associated with disinfection in large regional water distribution systems.

"I know the systems Delvin has assisted with are grateful for the knowledge and resources he has been able to provide. I hope he continues to play an active role in our industry."

DeBoer's influence on the water treatment industry almost didn't happen if it had not been for Professor Dwayne Rollag, former department head of civil and environmental engineering.

Advice well taken

DeBoer, who received his bachelor's degree from SDSU in 1978, enrolled at State intending to be a civil engineer. It wasn't until taking a water supply engineering course as a junior that "I really started to appreciate the environmental engineering discipline," says DeBoer, who was encouraged by Rollag to attend graduate school.

Earning a master's degree from State in 1980, DeBoer took a job as a project consulting engineer in Hopkins, Minnesota.

"Delvin's knowledge about water chemistry is absolutely unmatched. Most water professionals I know who have attended his training classes are in awe of his passion and breadth of experience."

— Jim Auen, operations manager of the Lewis & Clark Regional Water System

After one year there, Rollag invited him back to be an instructor, and told him if he liked the teaching world, that he should seriously consider obtaining a doctorate.

It was an invitation that would have a lasting impact on water treatment operations throughout the area.

"When I was in consulting, one of the things I thought I would never be was a teacher. Well, as it turns out, during my time as an instructor I decided it was something that I wanted to do, and so I went to get my doctorate and I've been here ever since."

Once moving into environmental engineering as a discipline, DeBoer became focused on the science/chemistry aspect of engineering.

"I enjoy the idea of making water so it doesn't cause water-born diseases," he says. "The idea of creating water for public distribution that allows people to drink it and not have adverse health affects—that is really something that I am passionate about.

"If you look at the work that my graduate students and I have done over the years you will find most are research projects that have a practical application to solve a problem that has to do with improving water quality or to respond to a drinking water regulation. It's all about improving the quality of life."

Knowledge spread to others

In addition to classroom and laboratory teaching duties, DeBoer has directed the Water and Environmental Engineering Research Center since 2003, and the Regional Water System Research Consortium since it was created in 2007.

The center addresses environmental and water resource problems of local, state, and national interest. Regional interests are also addressed through the consortium, which was implemented to sustain the development and service life of regional rural water systems.

DeBoer, who was given the 2011 College of Engineering Distinguished Researcher Award, conducts classes for plant operators from around the state and they always come away better prepared for their job, including Auen.

"Delvin's knowledge about water chemistry is absolutely unmatched," he says. "Most water professionals I know who have attended his training classes are in awe of his passion and breadth of experience.

"Many instructors have the technical knowledge mastered, but are sometimes unable to relay that effectively to a diverse audience. Delvin has the unique ability to communicate at a level that's understood and accepted. His friendly demeanor invites interaction and participation in the class."

Says DeBoer, "I've enjoyed the interaction and working with engineers, managers, and operators of water systems to help them understand problems and improve their systems."

Mentoring main satisfaction

Perhaps DeBoer's greatest fulfillment has been mentoring graduate students who have gone on to leadership roles in designing water and wastewater treatment systems throughout the United States. He will have advised sixty-four graduate students during his tenure, including fifty-six who have completed their work and another eight still in the program.

"Really, a primary focus of my job has been to mentor grad students on their research projects," he says. "I get great satisfaction in the success of students who I have worked with and are successfully improving the quality of life for people."

Laura Baumberger, an associate with Carollo Engineers in Sarasota, Florida, who earned her master's degree from SDSU in 2003, says she hasn't found anyone close to DeBoer's caliber.

"Dr. DeBoer is so passionate about both water treatment and teaching, which makes for a great combination in a professor. Throughout my eight years of working in the water industry, I still haven't found anyone who knows water chemistry better than him."

Baumberger points out that graduate students have an even greater appreciation for DeBoer due to his knack for finding real-world thesis research projects at local and regional water treatment systems.

"While some professors focus on laboratory research, I think it's more beneficial to do research to solve problems at local water treatment plants. These projects not only provide an excellent educational opportunity for students, they also help water utilities solve issues at their facilities."

DeBoer was presented with SDSU's Award for Teaching Excellence in 1999, and ten years later, was named the College's Academic Advisor of the Year.

Will remain in field

The honors don't come as a surprise to advisee Darin Brickman, who earned his bachelor's degree in 1991 and master's degree in 1993.

"As an instructor, Dr. DeBoer exhibited skills that were unmatched," says Brickman, principal engineer with Burns & McDonnell of Centennial, Colorado. "He encouraged, if not demanded, individual effort in order to promote professional growth. I quickly learned that when you attended his class, you had better be prepared to learn. Most of all, though, he made it fun to learn.

"As an individual, Dr. DeBoer is one of the finest and most genuine people I have ever met. He not only cares about how his students are doing academically, he also cares about the students as people."

Although DeBoer is leaving the University in June, that doesn't mean he's leaving his passion behind, too. On the contrary, he plans to seek a consulting position somewhere and be active in the field of water supply engineering and water treatment.

"I will continue to work to help people improve their quality of life," he says. "I will miss working with people and colleagues I have grown close to, and I will especially miss the students and being their mentor.

Kyle Johnson

Photovoltaics
doctorates awarded

Five years after forming, solar research program produces graduates

Pavel Dutta came to SDSU in February 2007 as a pioneer; he just didn't realize it.

Dutta was recruited to Brookings from the Indian Institute of Technology in Kharagpur in eastern India after receiving his master's in physics. When he arrived here, he saw plenty of snowflakes but no other students in his program—graduate-level photovoltaics.

Dutta knew to expect snow. He didn't realize he was the first student in a program formed in 2006.

His arrival came two years before the Center for Advanced Photovoltaics moved into the new Electrical Engineering and Computer Science Building. The center was housed in the Solberg Annex and Harding Hall, and the lab didn't have many instruments, Dutta recalls.

"But I got good support from [Professor] David Galipeau, and I was able to experiment with collaborators," Dutta says.

The collaboration comes from the Photoactive Nanoscale Systems Research Group, a statewide organization that was formed in 2006 as a result of the Governor's 2010 Initiative, which started a nanotechnology research center at State and the School of Mines, and a light-activated materials center at Mines and the University of South Dakota.

Started on ground floor

By late October 2011, Dutta had completed all requirements to become the first SDSU doctoral graduate in photovoltaics.

He says he is thankful for the opportunity to start on the ground floor of the program. He was able to visit other labs and then establish the labs here. It wasn't long before four newly hired professors arrived and within two months other students followed, he says.

"I considered myself lucky because there weren't many students so I became one of the primary users of the clean room. When you have less students, you have the liberty to do different things," the motivated student shares.

Largest program in Midwest

Today the photovoltaics program has seven electrical engineering faculty members plus two in chemistry and one in mechanical engineering in the research group.

The student count shows twenty-five in the master's program, twenty pursuing a doctorate, three doing postdoctoral study, and three undergraduates helping with research, according to Galipeau, graduate coordinator of electrical engineering.

The total head count of more than fifty students gives SDSU the largest photovoltaics program in the Midwest.

Galipeau notes that while Mines and USD also have sizeable programs, the focus is broader here. Mines and USD work on cell materials and processes. "We do all of those things, but our focus is also on making the [solar] cells because we're engineers," Galipeau says.

Defining the mission

Simply defined, the research focus is to improve the efficiency and reduce the cost of solar cells.

Under that umbrella, faculty and students use grant funding to work on:

- Organic-based solar cells,
- New developments in inorganic solar cells, and
- Developing an inorganic/organic hybrid cell.

Dutta's research was a comparative study of inorganic and organic semiconductors for photovoltaic applications. Inorganic materials have traditionally been used for solar cells, but organic materials are more flexible. In fact, they can be screen printed on large areas, Dutta says.

"Right now the research is in the experimental phase, but the goal is to reach record-level efficiency and have it certified," he explains.

"To compete with fossil fuels, the cost for solar cells is too high. We're trying to make a cost-effective solar cell with these other organic materials," says Dutta, who notes that research is five to ten years away from having a product at the commercial level.

What makes State research unique?

The goal is to have a solar cell with a ten-year lifetime and 10 percent efficiency, which is defined as the number of photons converted into electricity divided by the number of photons absorbed.

"Many researchers are doing these experiments all over the world. We are unique in that we are concentrating on knowing the fundamental charge transfer processes and how we can manipulate the material structure to enhance the efficiency and charge transport," Dutta says.

"We want to replace the crystalline silicon cells with disordered inorganic alloys like amorphous nanocrystalline silicon thin films and organic polymer blend films. These inorganic and organic semiconductors are very promising candidates for cost-effective photovoltaics," Dutta says.

Carrying the program's message

Venkat Bommisetty, his dissertation advisor, says that Dutta's research "is very state of the art, very complicated.

"There are only a handful of groups in the world that are focusing on that. For other people to come in at his level, it's going to take some time. But we're happy

Pavel Dutta works in the glove box to fabricate organic solar cells during his last day of work in the characterization lab in the Electrical Engineering and Computer Science Building October 20, 2011. In May, he received his diploma as the first graduate of the photovoltaics doctoral program. Two others finished shortly after Dutta. **Page 7:** Dutta tracks the progress of a solar cell being fabricated in the characterization lab.

to have him out there to raise the flag" for the SDSU photovoltaics program.

Attracting high-quality graduate students is a challenge, but Bommisetty hopes success stories like Dutta will change that.

While Dutta chose to wait until May to graduate so his parents could attend, he began his postdoctoral work at Mines in mid-November.

At Mines, he says he plans to continue his career goal of "developing novel photovoltaic materials, devices, and techniques for cost-effective and high efficiency solar cells with the ultimate goal of successful commercialization of affordable, clean, and renewable energy."

Two other SDSU students began their postdoctoral work shortly after Dutta. Yong Li, a native of China, is now doing postdoctoral work in Kansas City while Mariyappan Shanmugan, a native of India, is doing postdoctoral work in Boston. Both men finished the program shortly after Dutta.

Galipeau says, "It's very gratifying to me that all three of these quickly got postdocs. It shows me that, from this fledging program, there's strong demand for its graduates." There are others that have completed their oral defense and are finalizing their dissertation, he says.

Academic nuts and bolts

The master's program requires thirty credits with six being the thesis. The doctorate requires an additional sixty credits with thirty-six of them connected to the dissertation.

"The master's is typically 75 percent coursework and 25 percent new research while the doctorate is focused on applying knowledge to advance a research topic. So it's more like 25 percent learning what's already known and 75 percent developing new knowledge," Galipeau says.

Future belongs to hybrids

He adds that an area where researchers are establishing new knowledge is with the hybrid solar cell.

"We're one of the few groups that have tried to integrate the traditional electrical and mechanical engineering disciplines with chemistry expertise to focus on hybrid cells," Galipeau says. "The short term is improving the efficiency of organic and inorganic solar cells.

"The long term is to integrate organic and inorganic into novel structures using novel processes."

He calls research on hybrid solar cells "somewhat of an unplowed field. It's taking a long time to get the people on board and the equipment activated in the clean room. It's somewhat high risk [in terms of success], but it's an area that has potential," Galipeau says.

He adds that the potential for grant funding is better because there is less competition from other researchers.

Granted a successful start

To date, he is quite happy with the success in grant applications. In 2006, the statewide Photoactive Nanoscale Systems Research Group received a $15-million startup grant through the National Science Foundation and EPSCoR (Experimental Program to Stimulate Competitive Research).

That three-year award was followed by a $20-million, five-year award from the National Science Foundation.

Also in 2009, the program received a $3-million, five-year award from the National Science Foundation for an Integrated Graduate Education Research Training Grant. Other NSF grants of nearly $2 million have been used to buy equipment, Galipeau says.

Faculty also have received individual awards, including three in the half-million-dollar range to Bommisetty, Mahdi Farrokh Baroughi, and Qiquan Qiao.

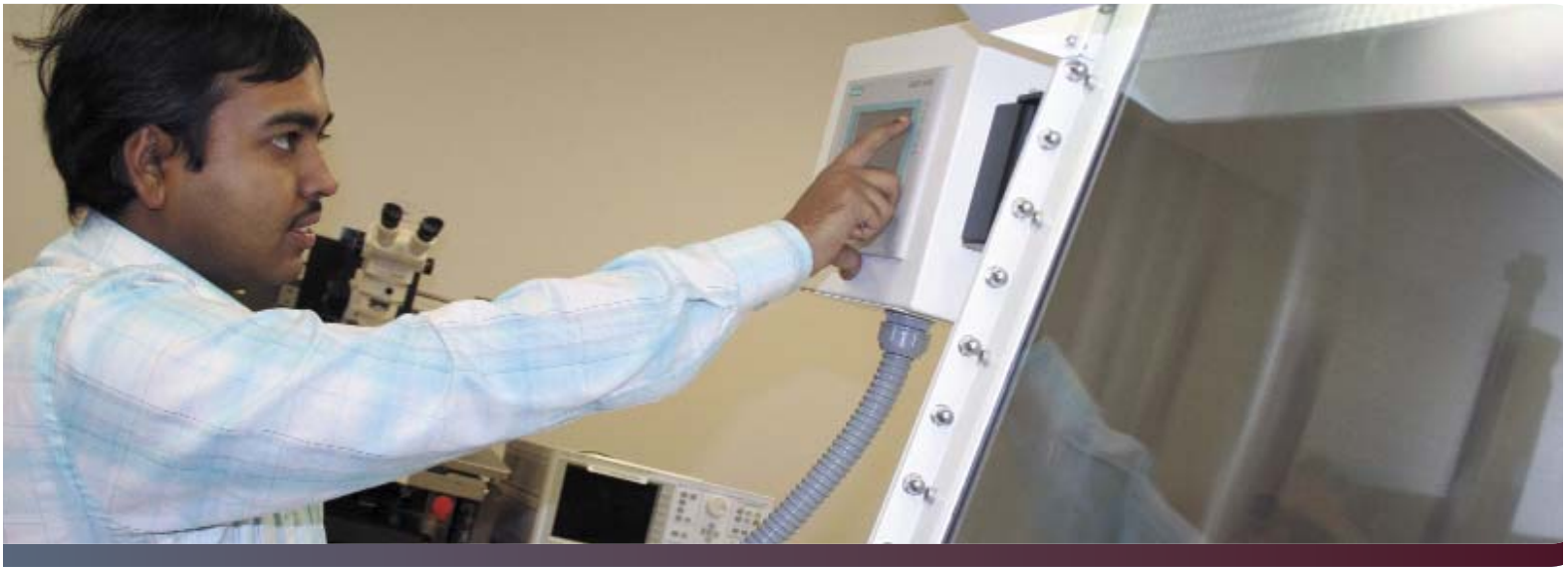
Galipeau says a well-equipped facility with experienced faculty and a history of research advances makes the Center for Advanced Photovoltaics a good candidate to compete for future grants, though they won't be as large as the initial startup grants.

"As long as our society uses energy, this program has a fundable reason for existence. We also will migrate our research into energy systems. Once the cells are efficient, the efficiencies of photovoltaic systems also need to be studied," Galipeau says.

For Dutta, his research produced an unexpected result.

In December 2010, he married fellow graduate student Monika Rathi.

Dave Graves



Ph.D. program updates

The Department of Mathematics and Statistics Ph.D. Program in Computational Science and Statistics was initiated in fall 2005 and now has twenty-one students, according to Department Head Kurt Cogswell.

Its three graduates are continuing successful careers. They are:

- Thomas Brandenburger '09, assistant professor of statistics at SDSU;
- Alfred Furth '09, vice president of Portfolio Analytics and Risk at CAPITAL Card Services in Sioux Falls;
- Michikazu Nakai '10, research assistant professor of statistics at Kyushu University in Japan.

Three more who graduate in 2012.

Funded research is being carried out in the areas of:

- bioinformatics,
- economic modeling,
- financial modeling,
- human nutrition,
- medical informatics,
- particle physics,
- photovoltaics modeling,
- plant genomics.

The Geospatial Science and Engineering program was initiated in 2005 when the Geographic Information Science Center of Excellence was created, according to Michael Wimberly, program coordinator and senior scientist at the center.

The program, which operates in coordination with the College and Geography Department, has two curriculum tracks—remote-sensing engineering; and remote-sensing geography, which is the primary focus.

Six students have received a doctorate in remote-sensing geography; the first being in 2010.

Gyanesh Chander was the first to get a Ph.D. in the engineering specialization. In 2011, he received his doctorate for research done with optical satellite calibration.

There are twenty-six students now enrolled with twenty-four in remote-sensing geography; and two in remote-sensing engineering.

Funded research in remote-sensing engineering is being conducted by Professor Dennis Helder on sensor calibration.

Wimberly says funded research areas in remote-sensing geography include:

- Processing vast amounts of Landsat data and developing an application to disseminate these data to scientists and engineers.
- Using remote sensing to detect climate abnormalities.
- Land-cover mapping at regional to global scales.
- Understanding how the land surface is changing over time.
- Monitoring fire outbreaks and targeting areas at risk for uncontrolled burns.

Wimberly observes, "We have students graduating who are successful. Graduates have gone on to find employment as faculty and research scientists at university and government

New academic programs

Software engineering, computer science programs are alive and well

Things have a way of working out, and for the College's software engineering and computer science programs, that seems to be the case.

The software engineering major was suspended when the University announced budget cuts April 14, 2011. However, all was not lost, because taking its place was a minor in software engineering, which was approved by the Board of Regents in May.

With a minor, the College is able to provide training for computer science, electrical engineering, and mechanical engineering majors by using existing programs and resources.

"Students seeking a degree in those other majors can still pursue a career that requires a skill set in software engineering, which is very valuable to employers throughout the region," says Professor Steve Hietpas, head of the Department of Electrical Engineering and Computer Science.

"We are still able to offer key software engineering courses that before supported the major, but now support the minor. Companies are pleased to see that we are maintaining a strength in software engineering."

More marketable

More good news followed in October when the regents approved a master's degree in computer science, replacing the old master's degree in engineering with an emphasis in computer science.

The new master's degree prepares students for a professional career in software development and computer science research. Since it replaces the computer science emphasis within the former master's degree in engineering, no additional startup costs were incurred.

University officials indicate the master's degree in computer science is a more marketable graduate degree for prospective students and their employers.

"I think that's the most important benefit," says Hietpas. "It doesn't change what courses are being offered, the level of difficulty, or the quality of the program.

"With this new master's degree, it increases our ability in recruiting excellent graduate students, and it also provides better opportunities for them when applying to companies."

Kyle Johnson

Galipeau

earns College's first endowed professorship

November 10, 2011, was a historic day for the College of Engineering and SDSU. On that day, the College hosted an investiture ceremony installing Professor David Galipeau as the first faculty member to hold the Harold C. Hohbach Endowed Professorship in Electrical Engineering.

The forty people gathered for the ceremony at the Hobo Day Gallery in the University Student Union were told by Dean Lewis Brown: "You're really becoming part of history."

President David Chicoine carried on the day's historic theme. "This really is a milestone celebration," says Chicoine, noting that it marked the first endowed professorship in the College of Engineering. "You can't have number two, number three, or number four until we have the first one."

According to Chicoine, it takes great faculty to attract great students. With both of those ingredients "we will continue to fulfill the promise of being a great University," Chicoine says.

Brown explained to the crowd the significance of endowed professorships. He asked them to imagine a young, "hot shot" engineering student who had just earned a brand-new doctorate and started work at the University.

The newly minted assistant professor has plenty of work ahead: learning about teaching, setting up courses, beginning scholarly work, garnering grants, and attracting graduate students. Ten years of hard work, at about age 40, will result in a full professorship.

"Good faculty members will continue to grow," Brown says, despite the fact that a full professorship is the highest rank.

An endowed professorship, on the other hand, gives faculty members another career goal. The earnings from the large financial gift used to start an endowed professorship are used to enhance the salary of the professor and also support the professor's scholarly activities.

"Those are what attract the highest-quality professors," Brown says, and those professors, in turn, attract the highest-quality students. "Now we have a chance to retain a superstar faculty member."

It started with a letter

Brown told the story of how he read a letter years ago from Harold Hohbach stating his intentions to finance an endowed professorship.

According to Brown, Hohbach's fulfillment of those early intentions is an indication that "his heart has always been back here in Brookings and this campus."

Addressing the crowd, Hohbach '43 recalled his wife's recent Stanford University reunion, where he talked to other alums about the state of education in the United States. In particular, they were concerned about the high school dropout rate and students who have a high school diploma but aren't yet ready for college.

He told the story about his classmate Gene Amdahl of Flandreau, who entered SDSU seeking a degree in mechanical engineering. A tremor in Amdahl's hand kept him from doing the drafting required of mechanical engineers. A professor guided Amdahl to engineering physics, which resulted in a lucrative career as founder of the Amdahl Corporation.

It was then Hohbach could see the positive influence that a teacher could have on the life of a student.

Benefactor Harold Hohbach, left, and Professor David Galipeau pose in front of the Bummobile November 10, 2011, when the head of the photovoltaics program became the first faculty member to hold the Harold C. Hohbach Endowed Professorship in Electrical Engineering.

"That's why I've thought about this professorship for a long time," Hohbach says.

A boost for department, too

Professor Steven Hietpas, head of the Department of Electrical Engineering and Computer Science, told the audience he was sure about two things: recruitment for his department would benefit from having an endowed professorship and the right man had been chosen for the job.

"This allows a department to recruit and retain the highest-quality faculty," Hietpas says.

According to Hietpas, the holder of an endowed professorship should show leadership, innovative ideas, and help the department meet its strategic goals.

"Dave Galipeau has been an exemplary example of these characteristics," Hietpas says.

Months later, still a surprise

Galipeau's acceptance speech, reproduced below, shows a man humbled by his selection and eager to share the credit with his family and his colleagues.

Two months later, when Galipeau was asked to reflect on his selection, those same traits came through again.

"It was an unexpected surprise and honor," Galipeau says, still shaking his head in wonder at what had transpired.

While it's obviously difficult for him to talk about his selection for the endowed professorship, he's eager to explain how his new position will affect his work.

"It actually is going to make quite a difference," Galipeau says. "There are expectations of me to create novel ideas and initiatives in the electrical engineering program at the undergraduate and graduate levels."

On the faculty at SDSU since 1992, the endowed professorship has given Galipeau a new perspective to go with his new opportunity.

"It lets you take a fresh look at what you can contribute to the University, the College and the department," Galipeau says.

While the award may still surprise Galipeau, he does see it as an affirmation of the work he's done at SDSU.

"It's a suggestion of strong support for what you've been doing," Galipeau says.

Dana Hess

Hohbach leaving his mark on SDSU

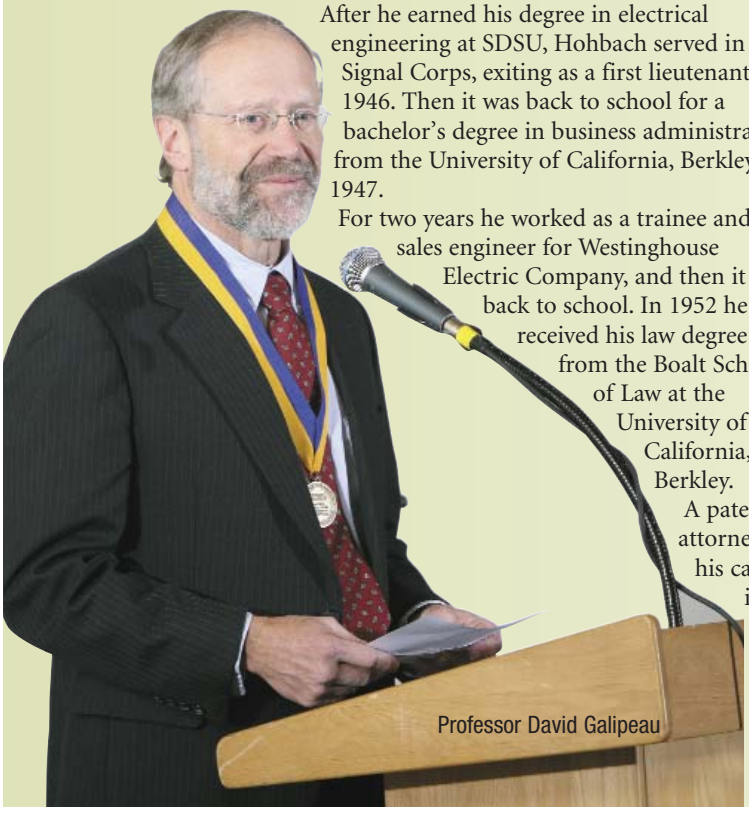
With a brand-new Electrical Engineering and Computer Science building to show off, the University Student Union may have seemed like an odd choice for the investiture ceremony for the College's first endowed professorship.

It all made sense, however, because of the man behind the endowment, Harold C. Hohbach.

Hohbach, a 1943 graduate, oversaw the restoration of the 1912 Model T Ford that serves as the Bummobile. The event took place in the Hobo Day Gallery, where the refurbished automobile makes its home.

"How fitting that we should be here in the shadow of the Bummobile today," Dean Lewis Brown told the crowd that gathered for the investiture ceremony.

It might seem quite a leap from restoring an old car to endowing a professorship, but Hohbach's life has been an eclectic mix of interests.



Professor David Galipeau

After he earned his degree in electrical engineering at SDSU, Hohbach served in the Signal Corps, exiting as a first lieutenant in 1946. Then it was back to school for a bachelor's degree in business administration from the University of California, Berkley, in 1947.

For two years he worked as a trainee and sales engineer for Westinghouse Electric Company, and then it was back to school. In 1952 he received his law degree from the Boalt School of Law at the University of California, Berkley.

A patent attorney, his career in intellectual property included extensive litigation and obtaining patents in electronic, semiconductor, and medical device fields throughout the world.

He has also been active in real estate in the Palo Alto, California, region since 1971.

The parents of four children, the Plankinton native and his wife, Marilyn, have ten grandchildren.

Dana Hess

Colleagues brought out Galipeau's best

Editor's note: Reproduced below are Professor David Galipeau's remarks made upon his investiture as the Harold C. Hohbach Endowed Professor in Electrical Engineering.

Well, I certainly never thought I would receive a medal, in my life. It will always serve as a reminder to me of what a great place SDSU has been to work, as well as the future opportunities this professorship offers.

Receiving the Hohbach Professorship is, of course, a great honor and privilege. For me it has also become a time for reflection as to why I have received such recognition. According to my wife, I work pretty hard, but I know that others work harder.

So I think the key to my success has been the many highly talented and dedicated people that I have associated with, and this wonderful University environment. These have inspired me and brought out my best.

So the credit for this honor really goes to my parents who did so much for me; my wife Pat, who has put up with me the longest, and who, as she sometimes reminds me, picked me long before this selection committee; my advisers, who taught me how to conduct research; SDSU administrators, who provide this wonderful, supportive environment; colleagues that stimulated me; and perhaps most important, my students, for they have done the lion's share of the work while enduring my passion and enthusiasm on a too frequent basis.

I want to thank all of these people for their support and friendship, many of whom are in this room; with special thanks to Harold Hohbach for sponsoring this professorship; and my former and current department heads and deans: Virgil Ellerbruch, Lew Brown, Dennis Helder, and Steve Hietpas, for their support over the last twenty years.

New Office of Engineering Research offers support, coordination

The new millennium has been good to the College of Engineering. In 2000, external funding for research tallied about $2 million. In fiscal year 2011, that total grew to just under $10 million.

The jump in research funding was one of the reasons for the formation of the Office of Engineering Research led by Associate Dean for Research Dennis Helder.

The office got its start May 22, 2010, with Helder's appointment as associate dean. Tammy Loban, an administrative assistant, joined him June 21 and the staff was completed with the addition of Dianne Nagy, a grants coordinator, September 22.

The office works to support faculty grant efforts while also coordinating the College's research efforts for future growth.

"The role of research is getting more and more important within the University," says Helder, who served as head of the Electrical Engineering and Computer Science Department prior to his appointment.

Faculty benefits from pre-award services

The last steep rise in the College's external research funding has occurred during a recession that witnessed an increased competition for a decreasing pool of research funding.

"Nationally, it's a much more competitive environment," Nagy says. "There's a surge in proposals with less money going out."

Nagy's role is pre-award services, making sure that a researcher's grant application is as good as it can be.

"She focuses on the proposal itself," Helder says, noting that Nagy will check on format, content, and making sure the application is properly aligned with the guidelines and priorities of the funding agency and is responsive to the solicitation.

A testimonial from Professor Ting

In February 2011, Professor Francis Ting applied for a National Science Foundation grant with the help of the Office of Engineering Research.

The office reviewed his budget, checked the formatting of the proposal, and proofread it for grammatical mistakes.

"That's great because you often don't pick up the mistakes," Ting says.

Like many researchers, Ting has noticed a more competitive atmosphere in the world of research funding. He sees the new office as giving him an advantage in the competition for grant funding.

"The amount the federal government can support has decreased. Any help that gives you an edge is good," Ting says. "You might be just right on the borderline and that extra help would push you over."

In Ting's case, the help he received from the Office of Engineering Research helped him land a four-year, $397,474 grant to study the fluid mechanics of breaking waves.

"The research office is very helpful," Ting says.

"One thing I've been particularly pleased with is the staff in this office,"

—Dennis Helder

Staff key to support mission successes

Other support services available from the office include distributing seed grants, providing grant-writing workshops, tracking research performance, assisting in the selection of the College's Researcher of the Year, and publicizing research achievements on a website and in an annual report.

In addition to information of research facilities, projects, publications, and awards, the website also provides links to databases and agencies as well as resources for proposal development.

After almost two years in operation, Helder attributes the office's success in fulfilling its support mission to his staff.

He praises Loban for her encyclopedic knowledge of University policies and procedures and Nagy for her tenacity and willingness to tackle tight deadlines.

"One thing I've been particularly pleased with is the staff in this office," Helder says.

Office will also coordinate research

While each researcher or research team is concentrating on their own projects, it's Helder's job to make sure their efforts are all focused in the proper direction. Helder hopes to develop a Collegewide approach to research so that areas of study that overlap take full advantage of the strengths they have in common.

"We don't know as much about each other as we should," Helder says.

To increase the communication about research, Helder has formed the Engineering Research Council made up of the major principal investigators within the College.

Helder can already see a couple areas where the College could play to its strengths by bringing common areas of expertise together.

"There are a lot of people in this College working on alternative energy," Helder says, noting the work going on in photovoltaics, wind energy, and biofuels.

There's a similar widespread interest in remote sensing images.

"Obviously, SDSU has some niche roles to play," Helder says.

His plans for coordination of research may reach beyond the College. Helder sees opportunities to work with the College of Agriculture and Biological Sciences and the Chemistry and Biochemistry Department.

While the office has proven that veteran researchers like Ting can benefit from its efforts, Helder points out that new faculty need the office's services if they are going to do the kind of successful research that results in tenure.

"A faculty member must develop as a teacher and as a researcher. It's a bit of a learning process," Helder says. "That's another reason why this office is important at this time."

Dana Hess

Dennis Helder, who took on the newly created position of associate dean for research, poses with his office staff, Tammy Loban, left, administrative assistant, and Dianne Nagy, grants coordinator.

Construction

College's next project: Architecture, Mathematics, and Engineering Building

Above: Phase II of the Electrical Engineering and Computer Science Building is to be finished in April. Phase I was dedicated May 1, 2009.

Opposite page, from top: There's not much decorating needed in the new optics lab in Phase II of the Electrical Engineering and Computer Science Building. Just paint the walls black.

Fume hoods are taking shape in Phase II of the Electrical Engineering and Computer Science Building. The $4.4-million building is to be dedicated April 27.

What a difference a new building makes.

That's what the College of Engineering is finding out after the opening of Phase I of the Electrical Engineering and Computer Science Building.

"Now we have one of the best facilities anywhere," says Dean Lewis Brown. "It has helped us recruit both students and faculty."

Recruiting for the College should get even easier as the $4.4-million Phase II of the Electrical Engineering and Computer Science Building nears completion. Brown estimates that the building will be finished in April of this year.

But the College won't stop there. An Architecture, Mathematics, and Engineering Building is early in the planning stages having just been approved in the Board of Regents' ten-year plan for capital building projects.

Brown says plans call for hiring an architectural engineering firm this summer with groundbreaking for the new building in summer 2013.

Preliminary estimates call for the new building and the campus utilities infrastructure to cost $15 million to $17 million with $7 million of that raised through private donations.

The buildings are a centerpiece of It Starts with STATE: *A Campaign for South Dakota State University*. The campaign, which began in 2007 in response to the University's long-term strategic plan, has a goal to raise $200 million in six years. By the end of 2011, It Starts with STATE had received more than $177 million in gifts and pledges. The campaign is scheduled to conclude December 31, 2012.

Many departments on the move

The creation of new space in Phase II of the Electrical Engineering and Computer Science Building will mean moving day for many departments.

Portions of the Department of Electrical Engineering and Computer Science that didn't make it into Phase I will move first. That department has been spread through offices and facilities in Solberg Hall, Crothers Engineering Hall, and Harding Hall.

"The idea is to finally get them consolidated into one building," Brown says.

> **"It's really a big opportunity for the Physics Department. This is a project that impacts everyone in the College."**
>
> —Dean Lewis Brown

Physics professors are another group looking forward to completion of the new building as that department will have much of the middle two floors.

"It's really a big opportunity for the Physics Department," Brown says. "This is a project that impacts everyone in the College."

For now, the three R's: Remove, Refurbish, Renovate

Once the Physics and Electrical Engineering and Computer Science Departments are settled in their new quarters, the entire third floor of Crothers Engineering Hall will be vacant—but not for long. How to use that space was the subject of a six-month space reassignment plan.

"Civil and mechanical engineering will get a pretty substantial increase in new space," says Brown, noting that in some cases making the space usable for its new tenants will result in significant renovation.

When Brown looks into the future he can see completely moving out of Harding Hall, perhaps within five years. When that happens, the College's two outreach centers—Extension Engineering and the South Dakota Local Transportation Assistance Program—will be moved into Crothers Engineering Hall.

"They'll be closer to the center of the College of Engineering in some much nicer space," Brown says.

Departments share space in new building

When the Mathematics and Statistics Department abandons Harding Hall for new quarters in the Architecture, Mathematics, and Engineering Building, Brown foresees an easier time for the department's recruiting efforts.

"Our old facilities at Harding Hall have had a negative impact on recruiting," Brown says, noting that it's tough to convince students they'll be enrolled in a cutting-edge, state-of-the-art program when it's housed in a 1950s-era dormitory.

The new 60,000-square-foot building will be attached to the east side of Solberg Hall and house architecture on the top floor, mathematics and statistics on the second floor, and the engineering technology and management department and mechanical engineering on the bottom floor.

The engineering shops on the first floor will be shared with the architecture program.

More space may be needed for research

The same crystal ball that forecasts vacating Harding Hall is telling Brown that the College may still need more room in the future.

While Brown doesn't foresee adding any undergraduate academic programs in the future, he won't rule out adding graduate programs.

The College's building boom has been sparked by a growth in enrollment and research funding. Enrollment has gone from 1,263 majors in 2000 to its current level of about 1,700 students. Research funding was between $1 million and $2 million just a few years ago and has increased to nearly $10 million.

"Research is our next pressure point for space," Brown says.

No matter what the future brings, Brown knows that the College is well on its way to having some of the best facilities in region.

"It's a very exciting time in the College of Engineering," Brown says. "A transformational time."

Fellow

Berdanier earns ASCE **fellow** status for distinguished career

Bruce Berdanier

The American Society of Civil Engineers, better known by its acronym ASCE, has been good for Bruce Berdanier.

Likewise, the professor and head of the Department of Civil and Environmental Engineering, has been good for ASCE.

Honoring a long and distinguished career in and out of the classroom, ASCE has elevated Berdanier to fellow status. He was formally given the title at ASCE's national board of directors summer meeting in Rapid City in July 2011.

To be named a fellow within ASCE is prestigious and rare. Less than four percent of the organization's 140,000 members worldwide hold the distinction.

The designation recognizes that an individual has attained an advanced level of responsibility in a career with at least ten years of service to the profession through ASCE. Prospective fellows must be nominated by other members who are fellows and recommended by a past president.

Pretty neat career

"It's been a long and satisfying career in civil and environmental engineering," says Berdanier. "I never planned to spend so much time with the ASCE organization, but in looking back, it certainly has created connections that have allowed me to get National Science Foundation funding for various research projects.

"I'm very humbled and honored to be named a fellow. To do all the things that I've been fortunate enough to accomplish, and being able to keep things happening, I can say, wow, a pretty neat career."

A member of ASCE since 1979, Berdanier has more than thirty years of municipal and environmental engineering design and project management experience. He has performed engineering, boundary, and mortgage surveys through the same time period.

Projects extend overseas

Berdanier's research interests and projects include surface water quality, water and wastewater treatment, and the use of bioindicators in monitoring environmental degradation. He was owner of a municipal engineering and surveying firm in Ohio from 1983 to 2007.

During the past sixteen years, Berdanier has been heavily involved with the design and implementation of water development projects in Haiti. He and his wife, Melinda, have set up a foundation to continue international water development. In addition, since 2009 he has spent time in Bolivia with the SDSU student group Engineers Without Borders to initiate a water development project in the South American country.

"This is the highest professional honor that can be awarded to a member of ASCE," cites Dean Lewis Brown. "SDSU and the College of Engineering are very proud of Dr. Berdanier's achievement." *Kyle Johnson*

Professor Bruce Berdanier joins with students during the Engineers Without Borders trip to Carmen Pampa, Bolivia, August 2011. The SDSU group was there working on water treatment. Their sign shows a big thanks to Dean Lewis Brown for his support in developing the Engineers Without Border student chapter and financially making the trip possible.

Bruce Berdanier, professor and head of Civil and Environmental Engineering, came to SDSU in August 2008 after serving as an associate professor of civil engineering at Ohio Northern University, where he was faculty advisor to the ASCE student chapter for four years. He was also on the ASCE committee for scholarships for four years.

Currently the ASCE regional governor of Iowa and South Dakota, he was an assistant professor of civil and environmental engineering at South Dakota School of Mines and Technology from 1996 to 2000.

Berdanier earned his bachelor's degree from Ohio State University in 1980; master's degree from Purdue University in 1983; and doctorate from Ohio State in

ACI names Wehbe **fellow** for professional accomplishments

Reading the bylaws of the American Concrete Institute, it makes perfect sense that Nadim Wehbe is a fellow of the institute.

A fellow shall have been a member of the institute for at least ten years, including three of the last five years. A fellow shall have made outstanding contributions to the production or use of concrete materials. In addition, a fellow shall have made significant contributions to ACI through committees and local chapters.

The professor of civil and environmental engineering was formally recognized as a new ACI Fellow during the ACI Convention March 18 at the Hyatt Regency in Dallas.

Less than 4 percent of the 18,000 members who comprise ACI are fellows of the institute. Organized in 1904, the institute is a nonprofit technical and educational society known as one of the world's leading authorities on concrete technology.

"The American Concrete Institute is the premier professional organization in the world for the advancement of concrete design and technology," says Wehbe, who is in his fourteenth year with the College.

"Having been nominated and then elected a fellow of ACI, I feel that I have attained a significant milestone in my professional life. I am humbled and honored to have received this recognition by my peers for my research, teaching, and service in the field of reinforced concrete structures."

Wehbe, an ACI member since 1998, is serving his third two-year term as chair of a joint committee on reinforced concrete columns. He also is a voting member on two other ACI technical committees and an educational committee.

For the last twelve years, he has taught courses and given seminars and webinars on the design of reinforced and prestressed concrete structures. In addition, he has conducted several research studies in the field of reinforced and prestressed concrete structures, and incorporated some of his research findings in his senior course on reinforced concrete design.

Honor speaks of expertise

College Dean Lewis Brown says it's a "real honor" for both Wehbe and SDSU.

"Only the top performing professionals achieve election to fellow status by the American Concrete Institute. One of the trademarks of a great institution is the distinguished achievements of its faculty and students."

Wehbe has been instrumental in accelerating research activities concerning structural and transportation-related engineering at SDSU.

He credits two major events for the increase in research in the Department of Civil and Environmental Engineering: establishment of the Mountain Plains Consortium (MPC) University Transportation Center program at SDSU in 2006 and the 2004 launching of the Jerome Lohr Structures Laboratory, which he coordinates.

The consortium has generated and cofunded a significant number of research studies, which so far has involved eight faculty members, ten graduate students, and more than a dozen undergraduate students, according to Wehbe, who serves as director of the consortium.

"The main beneficiary of the MPC program is the state of South Dakota since all of the studies that are cofunded by the program are designed to either resolve transportation-related problems or enhance the transportation system in the state," he points out.

The structures lab is the only facility of its kind in South Dakota for testing structural elements for strength and endurance. The facility is outfitted with a hydraulic structural testing system, two modular loading steel frames, a post-tensioning system, and an array of sensors and data acquisition systems.

Lab asset to state

The lab has the capacity to test a wide variety of structural specimens, from eighteen-ton bridge girders, building materials, industrial components to smaller items like bolts.

Nadim Wehbe poses in the Jerry Lohr Structures Lab inside Crothers Engineering Hall. Wehbe directs the lab.

"We are in a position where we can confidently test a full-range of specimens, from small ones to very large structures," observes Wehbe. "This lab not only serves the needs of local industry, but it's a tremendous resource for faculty and students to perform experimental research."

In addition, he indicates the lab has been a "big asset" to the state, especially research projects for the Department of Transportation as well as for many companies in the region.

Wehbe has had twenty-eight students in the graduate program seeking master's degrees in civil and environmental engineering with a specialization in structural engineering.

Kyle Johnson

Wehbe bio

Nadim Wehbe was an instructor, research engineer, and research assistant at the University of Nevada-Reno from 1991 to 1997 prior to SDSU. From 1980 to 1990, he served as project manager in Al-Khobar, Saudi Arabia.

Wehbe earned his bachelor's degree in

Helder earns distinguished professor designation

Few on a university campus meet the criteria for the title of distinguished professor.

At State, the candidate must satisfy standards for tenure, scholarly achievement, and contributions to the University.

The nominating process entails a blizzard of paperwork to show that the standards have been met.

With all that going on, Dennis Helder knew he had been nominated to be the first distinguished professor in the College of Engineering. But as a professor leading two research projects and serving as the associate dean for research, he naturally had other things on his mind.

Helder's new title was formally announced at the February 21 Celebration of Faculty Excellence banquet. Reached two days later to talk about his new designation, Helder was still shaking his head in wonder.

"It's a little humbling," Helder says. ""I just hope I can live up to the standards of this type of award."

Helder now finds himself in an exclusive group as only twenty-three professors have received the honor since it was first presented at the University in 1988.

Helder may be State's newest distinguished professor, but after more than thirty years as an engineer, he's approaching the new designation looking for a way for the University to get a return on its investment.

"There a lot of very talented people in the group," Helder says. "I've been asking myself, 'What could we do as a group to benefit the University?'"

One flexible engineer

As an individual, Helder's accomplishments have been plentiful. In his nomination letter, Dean Lewis Brown asserted that Helder is one of the most successful researchers ever employed at SDSU, serving as the principal investigator for grants and contracts in excess of $20 million.

Now, as associate dean for research, Helder is in a position to share his grant and contract expertise with the entire engineering research faculty. When he was new to research, Helder learned to be open-minded about new opportunities.

"One of the first things I learned as a new Ph.D. was that you have to be flexible," Helder explains. "I learned that they won't necessarily pay me to do what I want to do."

Trained in electrical engineering, Helder's flexibility led him to ten years of work developing an ethanol fuel for the engines of small aircraft. Currently he leads a research project seeking alternative energy solutions for the military.

Distinguished Professor Dennis Helder is flanked by Dean Lew Brown and Provost Laurie Nichols at the Celebration of Faculty Excellence ceremony February 21, when Helder's honor was announced.

Ultimately his flexibility turned into long-term relationships with EROS Data Center in Sioux Falls and NASA's Goddard Space Flight Center in Greenbelt, Maryland, as Helder earned a reputation as one of the world's leading authorities on spacial characterization and calibration of Earth imaging and sensing.

The reason for sacrifice

Brown's nomination letter also expressed amazement about how Helder, at the time leading the Electrical Engineering and Computer Science Department and a significant research project, could also spearhead the building of the first phase of the Electrical Engineering and Computer Science Building.

Taking time for supper with his family in the evenings and church on Sunday, Helder spent close to two years of long days and seven-day workweeks as the building took shape. It's not a regimen he recommends, but it was worth the effort.

"The reason you do these things is for other people," Helder says, noting that he knew how significant the new facility could be to the faculty and their students. "You're willing to make sacrifices for them."

Now that Helder's sacrifices and achievements have been acknowledged, he's still not sure how to respond. Fortunately, he has his family to keep him humble.

Helder smiles when he recalls the banquet and how his family quizzed him about the award and what it meant.

"At the banquet they were asking if it was the highest achievement for a professor," Helder says. "When I said I guessed it was, they said, 'Well, it's all downhill from here.'"

Dana Hess

College of Engineering **vital stats**

Enrollment (Fall 2011)

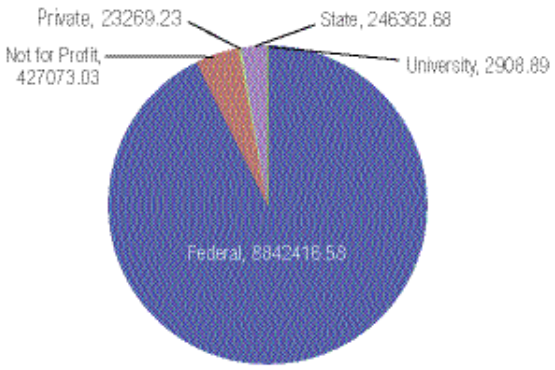
Total Enrollment	1,665	
Enrollment by Degree		
Doctoral	46	3%
Master's	189	11%
Bachelor's	1,430	86%
Gender		
Female	227	14%
Male	1,438	86%

Enrollment by programs 2011-12

Bachelor of Science		
Agricultural & Biosystems Engineering	55	4%
Civil Engineering	249	17%
Computer Science	131	9%
Construction Management	57	11%
Electrical Engineering	142	9%
Electronics Engineering Technology	49	3%
Industrial Management	52	4%
Manufacturing Engineering Technology	69	5%
Mathematics	137	9%
Mechanical Engineering	337	23%
Software Engineering	24	2%
Undeclared Engineering	54	4%

Master of Science

Agricultural & Biosystems Engineering	13	7%
Civil Engineering	34	18%
Computer Science	31	17%
Electrical Engineering	42	22%
Industrial Management	19	10%
Mathematics	10	5%
Mechanical Engineering	21	11%
Statistics	19	10%



2011 Engineering Expenditures

Doctor of Philosophy

Biological Sciences- Agricultural & Biosystems Engineering specialization	—	—
Computational Science & Statistics	23	52%
Electrical Engineering	19	43%
Geospatial Science & Engineering	2	5%

Degrees conferred (2010-11)

Total degrees conferred	290
Bachelor of Science	226
Master of Science	63
Doctor of Philosophy	1

College of Engineering Facilities

Agricultural Engineering Hall	48,696 sq. ft.
Crothers Engineering Hall	89,960 sq. ft.
Electrical Engineering & Computer Science Building	73,464 sq. ft.
Harding Hall	28,441 sq. ft.
Solberg Hall	55,735 sq. ft.

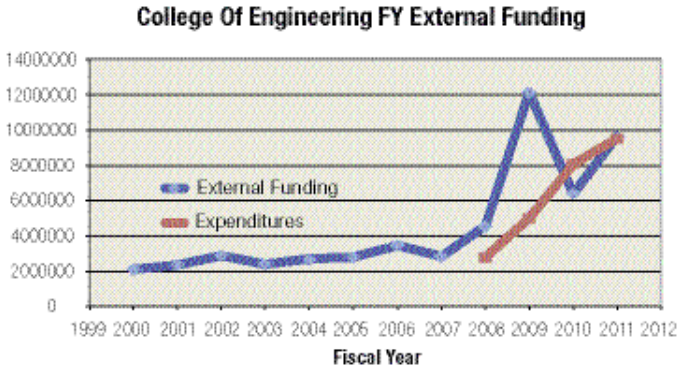
Proposed Developments

Architecture, Mathematics, & Engineering Building	60,000 sq. ft.

An integral piece of the SDSU engineering quadrant will be in place with an addition to the east of historic Solberg Hall. The new building will accommodate the needs of mechanical engineering, the growing mathematics, statistics and computational sciences programs, and the new architecture program.

Jackrabbit Guarantee Scholarship recipients (2011-12)

First-year students = 197 (included three spring '11



new **Faculty**

KENNETH BERTOLINI

Not only has Kenneth Bertolini always possessed a deep passion for building and sustainability in construction management, but also in automobiles.

While still undergraduates at Michigan State University, he and his wife, Katherine, restored a 1950s era British MGA sports car. No such project is complete without a scenic road trip from Oregon to Rhode Island, too.

Bertolini started instructing in the construction management program in the engineering technology and management department in the College of Engineering at the start of the 2011 fall semester.

Bertolini received his bachelor's in construction management from Michigan State University in 1991, and then managed sites for Centex Homes in Bradenton, Florida. He then returned to MSU to pursue his master's degree in construction management with an emphasis in estimating and job cost accounting while working for Christman Construction in Lansing.

Upon graduation in 1997, Bertolini began constructing his own homes as president of Kenneth Bertolini Builders for ten years. He was hired by Minnesota State University-Moorhead in 2007 as an assistant professor in construction management.

His close-knit family looks forward to renovating their own ninety-two-year-old Brookings home soon. Along with his wife, Katherine, Bertolini has a daughter, Lia Nella, and a son, Joe.

GREGORY DERYNCK

Those people passionate about agriculture know there is something special about endless, open fields, the coarseness of an animal's fur, and the grittiness of soil sifted through their fingers. Gregory DeRynck is creating a future in such features.

With a history of agricultural processing, particularly soybean processing and ethanol production, DeRynck is certified and experienced for his new role as Engineering Extension safety consultant.

"As a safety consultant with Engineering Extension, my job is to fulfill the department's mission to assist employers in the state with their technical safety and health needs for the purpose of saving costs for businesses and to benefit economic development," says DeRynck.

"The OSHA Consultation Program is a key effort of Engineering Extension. Above all, our goal is to keep people safe at work in South Dakota," he adds.

From Marshall, Minnesota, DeRynck attended SDSU, earning his bachelor's in dairy manufacturing in 1992. He also spent two years studying agronomy at the graduate level at SDSU.

Family also plays a special role in DeRynck's life. "I have a wonderful wife, Cheryl, who instructs and researches in the SDSU Plant Science Department, and two fine boys, Luke and Zane, ages four and nine," says DeRynck. "We enjoy playing and working at my wife's farm in Minnesota, family trips in the camper, and our German shorthaired pointers."

NANCY DURAN

After living in the "beautiful Northwest" for twenty years, Nancy Duran returned to the chilliness of the Midwest in 2007. The Arlington native became the program assistant for the South Dakota Local Transportation Assistance Program in September 2011, and previously worked as the office coordinator for SDSU's Office of Information Technology for the past four years.

An SDSU graduate, she earned her bachelor's degree in public recreation in 1980. Duran has worked in various computer and administrative positions in South Dakota, Alaska, and the Pacific Northwest. In 2006, she received early-out retirement from the federal government after working ten years with the V.A. Medical Center and fifteen years with the U.S. Fish and Wildlife Service.

After moving back to the Midwest, Duran said she had to change her fan allegiance to the Minnesota Vikings, Minnesota Timberwolves and the Boston Celtics. The reason? She enjoys watching Adrian Peterson, Kevin Love and Ray Allen, respectively. She and her fiancé, Dave, look forward to attending NBA games at the Target Center in Minneapolis.

Duran also likes Jackrabbit basketball, traveling, reading, drawing and music. She enjoys spending time with her daughter, Katy, now of New Orleans, and with her mother and sister, who live in the area.

THOMAS FROKE

Thomas Froke understood the value of persistence, hard work and experience as he took a new position as safety consultant with the Engineering Extension office in April 2011.

Froke graduated from SDSU in 1979 with a bachelor's in chemistry. He credits a variety of coursework throughout South Dakota, Iowa and Minnesota and work-related practices in gaining the knowledge needed for this position.

Previous work experience includes fifteen years assessing quality control, assurance and regulatory affairs in the pharmaceutical manufacturing industry. He has also worked two years in SDSU's chemistry department, five years in the government agency of Environmental, Health and Safety Department, five years

as environmental, health and safety manager for Poet Biorefining, and two years as a public safety inspector for South Dakota.

The Jackrabbit spirit holds constant in Thomas Froke's family. His wife, Kimberly, a Rutland School science teacher, is a 1979 horticulture graduate. Daughter Jennifer Bannwarth, a 2004 SDSU graduate in medical technology, works at Sanford Hospital in Sioux Falls. Another daughter, Heather Arnold, attended SDSU and now works at the Flandreau School District. His third child, Robert, graduates in spring 2012 with a bachelor's in math.

Froke also tries to keep up with three future grand-Jackrabbits— Lily, Logan, and Conner— while managing the family farm near Rutland.

ZACHARY GUTZMER

Zachary Gutzmer may be described as a person who takes his work home with him. After completing a day as a civil engineering instructor and manager of Lohr's Structures Lab, positions he took in August 2011, he returns to engineering hobbies at home.

"I restore and collect arcade video games and pinball machines," says Gutzmer. "These machines require a basic understanding of electrical and mechanical engineering to repair. I have enjoyed the challenge of learning these new concepts and I still have much to learn."

After growing up in Garretson, Gutzmer earned both his bachelor's and master's degree in civil engineering at SDSU in 2006 and 2008. He served as an adjunct instructor at SDSU from 2008 to 2010.

During graduate school, Gutzmer's research explored material properties of self-consolidating concrete. In his professional work, Gutzmer has immersed himself in testing the performance of structural components and systems.

CARRI HALES

As a diehard Vikings season-ticket holder that gets to as many games possible, Carri Hales has much to love about autumn. Not only does she cheer on Minnesota's purple and gold, but now teaches pre-algebra and college algebra to SDSU's blue and gold.

Hales received her degrees from the University of South Dakota: a bachelor's in mathematics education in 1998, a master's degree in secondary education with an emphasis in curriculum and instruction in 1999, and a master's in mathematics in fall 2004.

In 1998-99, Hales taught high school science in her hometown of Parker. She then taught twelve years of math and science at Yankton High School before joining the SDSU faculty in August 2011.

There are a lot of similarities in teaching high school students and college students," says Hales. "You constantly look for ways to give your students the opportunity to be successful."

Hales' parents and one brother, Adam, live in Sioux Falls. During the Vikings' offseason, Hales enjoys traveling, scrapbooking, and watching movies.

"Growing up, I would often play 'school' and make math 'homework' for my younger brother to do," says Hales. "So I guess the interest started early."

KATHERINE HEIBERGER

Katherine Heiberger joined the College in October 2011 as program assistant for the dean's office, a new part-time position.

Heiberger's role is to support the ongoing operations of the dean's office with particular emphasis on marketing programs, assisting with K-12 outreach activities, processing scholarship awards, and working with the engineering community and freshman advisors.

Before taking the position in the engineering college, Heiberger worked in the SDSU Office of Academic Affairs from 2005 to 2011 and specialized in managing the curriculum process and organizing the annual undergraduate catalog.

Heiberger, from Warroad, Minnesota, graduated from SDSU in December 2004 with a bachelor's degree in family and consumer sciences and a minor in journalism.

During her free time, Heiberger enjoys chasing after her two young sons, Rhys and Liam, and golden retriever, Aurora. Her husband, Greg, an SDSU alumnus and employee, coordinates and advises pre-health professional programs. Heiberger also manages her own photography business on the side.

MICHELE KUESTER

Before taking her current role as research assistant professor in the image-processing lab in September 2011, Michele Kuester worked as a remote-sensing scientist for the airborne group at NEON Inc. in Boulder, Colorado.

"I was responsible for planning mission operations, designing and building the airborne lab, and instrument calibration and data validation for the airborne payloads," says Kuester. "I was also the technical lead for the waveform LiDAR and digital camera."

LiDAR describes the optical remote-sensing technology that allows people to measure distances with a light or laser. Waveform LiDAR takes the technology further and allows one to look at the three-dimensional extent of a tree canopy, and is a very helpful tool for the study of the biophysical properties of forested regions.

Her expertise was gained with a bachelor's in physics in 2001 and master's in optical sciences in 2002 from the

Continued next page

University of Arizona in Tucson. She earned her master's and doctorate in atmospheric and oceanic sciences in 2007 at the University of Colorado in Boulder.

Kuester is eager to bring her ten years of experience in calibration and validation of satellite and airborne sensors into her new position at SDSU and looks forward to bringing the laboratory to new directions.

Kuester, originally from Wausau, Wisconsin, has three children: a three-year-old toddler and 15-month-old twins. She looks forward to engaging in outdoor activities like hiking, camping, and swimming with her family when they get a little older.

Before pursuing science, Kuester was the front-woman musician of a pop-industrial band called Leisure Hive in New York City.

JASON PROUT

A Michigan native, Jason Prout earned his bachelor's degree in engineering technologies in 1995 and master's degree in industrial management and technologies in 1998, both from Central Michigan University. He displayed his creative side in designing the school's athletic logo called the "flying C."

Today, he serves as an instructor of general engineering within the Department of Engineering, Technology, and Management. Some of his classes include engineering graphics, computer drafting, and geometric dimensioning. With an enthusiasm for both new and old technologies, he started a blacksmithing club at SDSU.

Prior to SDSU, Prout worked as part-time instructor for CMU and Saginaw Valley State University, teaching computer-aided design, drafting and table drafting. For nine years, he also taught engineering design technologies at Kirtland Community College in Roscommon, Michigan.

Prout said he gained valuable industrial experience as a computer-aided drafting product design engineer. Some of his time spent outside of teaching included automotive design engineering at Wright-K Technologies and aerospace design at Thomson Aerospace and Defense, both of Saginaw, Michigan.

Prout is married with four young children. In his spare time, he enjoys the outdoors, sci-fi, and Winterguard International, which are indoor color guard and percussion events.

He also can master a soundboard, mixing a smoothness of sound by combining audio signals for audiences of all sizes.

JON PUETZ

"I am so proud of all the team members of the SDSU Engineering Extension Office, and the great impact they have in making South Dakota employers' workplaces safer through the SDSU College of Engineering," says Jon Puetz, who became program director of the Engineering Extension office

Faculty **Awards**

DELVIN DEBOER

Delvin DeBoer, professor of civil and environmental engineering in the College of Engineering, has dedicated thirty-three years to SDSU. For his outstanding work and commitment, DeBoer was honored as the 2012 Researcher of the Year at SDSU.

This recognition flows back to his extensive history of researching water and environmental resources. DeBoer has especially worked with municipal water treatment and rural water systems in the state and region. He is the director of the Water and Environmental Engineering Research Center at SDSU.

Throughout his instruction at SDSU, DeBoer has mentored more than fifty civil engineering graduate students. According to Dean Lew Brown, this deeply committed relationship has enabled these students to grab lead design positions for water and wastewater systems around the country.

DeBoer is originally from Corona. After earning his bachelor's and master's degrees in civil engineering at SDSU in 1978 and 1980, respectively, he received his doctorate in civil engineering in 1990 at Iowa State University in Ames.

DeBoer and Davonne, his wife of thirty-one years, have three children. Kiel and his wife, Lindsey, live in Watertown. Erin and her husband, Matt, live in DeKalb, Illinois. Their youngest son, Cole, is a senior in Brookings High School.

DANIEL KEMP

If 2011 Teacher of the Year Daniel Kemp did not embark on a job interview road trip after receiving his master's degree, one wonders if today he would be in his thirty-sixth year of teaching at SDSU.

Students in the College of Engineering selected Kemp for the teaching honor in voting in March 2011.

Kemp's Jackrabbit career started as an assistant professor of mathematics in 1976.

He graduated from Knox College in Galesburg, Illinois, with a bachelor's in mathematics in 1963. After receiving his master's degree in mathematics from the University of Arizona in 1967, Kemp taught mathematics at Washburn University in Topeka, Kansas. After those three years, he pursued his doctorate from Oklahoma State University in Stillwater; receiving it in 1975. He taught at OSU for one year before taking that life-changing road trip to Brookings

At SDSU, where he was promoted to a professor in 1987, Kemp mentors students in the Math Club, Golden Key, and Honors College at SDSU.

Faculty news

Professor **STEVEN HIETPAS**, head of SDSU's Department of Electrical Engineering and Computer Science, was honored in June as the 2010-11 Outstanding Campus Representative for the American Society for Engineering Education.

Hietpas was selected for Zone III, a region that includes parts of the Midwest, North Midwest and Gulf Southwest. The award is given annually to those who have demonstrated staunch support for the organization on campuses. Hietpas has been campus representative since spring 2008.

He was recognized at the annual meeting in Vancouver, British Columbia.

Hietpas worked five years in the aerospace industry before going on to earn his doctorate in electrical engineering from Montana State University in 1994. He has been a faculty member at SDSU since August 1994 and became head of the Department of Electrical Engineering and Computer Science in December 2010.

The American Society for Engineering Education is a nonprofit organization that brings together engineering educators from all engineering fields to collaborate on solutions to promote excellence in instruction, research, public service, and practice.

ALBERT KRANZLER, 95, of Brookings, died March 24, 2012, at Brookview Manor in Brookings.

Kranzler was born July 11, 1916, in Bismarck, N.D. He was a math professor at SDSU for forty-two years, retiring in 1988. He was acting head of the math department from 1961 to 1967 and again in 1980.

Survivors include a son, Stan, of Camarillo, California. He was preceded in death by his wife and daughter.

QIQUAN QIAO, an assistant professor in the Department of Electrical Engineering and Computer Science, was one of five faculty members from South Dakota public universities to receive a Competitive Research Grant from the state Board of Regents.

Qiao was one of thirty-two to present proposals for the $450,000 that was awarded. His $93,450 award for work on Novel Polymers for Highly Efficient Organic Solar Cells was announced May 25. He has been on the faculty since May 2007.

It was the seventh year for the state program.

LINDA WENDT, secretary for the Mathematics and Statistics Department for twenty-six years, was named SDSU Career Service Employee of the Month for October 2011. In addition to her clerical duties, Wendt helps with the annual high school math contest.

THE FOLLOWING FACULTY MEMBERS WERE HONORED AT THE UNIVERSITY'S CELEBRATION OF FACULTY EXCELLENCE BANQUET FEBRUARY 21, 2012:

MADELEINE ANDRAWIS, professor of Electrical Engineering and Computer Science, was honored for global engagement.

Andrawis was recognized for her efforts in leading study-abroad trips in her home country of Egypt. She planned and executed an extraordinary travel program that included lectures; touring historical, religious, and archeological sites; visiting rural and urban settings; and taking a Nile River cruise.

Along with her husband, Alfred Andrawis, also an electrical engineering professor, she officiated an important exchange agreement between SDSU and the American University in Cairo.

KASIVISWANATHAN "MUTHU" MUTHUKUMARAPPAN, professor of Agricultural & Biosystems Engineering, received an F.O. Butler Excellence in

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COLLEGE OF ENGINEERING HOME PAGE www.sdstate.edu/engr/index.cfm

JOB FAIR
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YOUTH CAMPS
[Youth Engineering Adventure, Aerospace Careers Education, Girls, Engineering, Math and Science, Ready SET (Science, Engineering Technology) Go]
www.sdstate.edu/engr/camps/index.cfm
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ATHLETICS www.gojacks.com
FOUNDATION www.sdsufoundation.org
MUSIC http://www.sdstate.edu/mus/index.cfm
THEATER
(State University Theatre/Prairie Repertory Theatre)
www.sdstate.edu/cst/sut/index.cfm
www.prairierep.org
SOUTH DAKOTA ART MUSEUM
www.sdstate.edu/southdakotaartmuseum/index.cfm

Retired **Faculty**

With 116 years of combined classroom instruction to their credit, the College is recognizing the dedicated service of four faculty members, following the announcement of their respective retirements this year.

HOWARD NIELSEN, professor of mathematics and statistics, has been on staff for thirty-five and one-half years. Some of his former students are Dean Lewis Brown, Professors Dennis Helder, Alfred Andrawis, Nicole Klein, Byron Garry, and former dean of the College of Arts and Sciences, Jerry Jorgenson.

"When you get down to it, it's been my students who have defined me," says Nielsen. "I could have retired ten years ago, but I enjoyed this job too much to leave."

As a farm kid, his long-term retirement plans include the management and care of agricultural property in Aurora County between Mitchell and Chamberlain. In the short term, "I have a mountain lion hunting license," he notes with a big grin. He plans to continue another area of interest and that's conducting research in the biological control of noxious weeds, which are a significant economic drain for livestock producers, he says.

Nielsen earned his bachelor's degree from SDSU in 1963, followed by a master's degree (1966) and doctorate (1969) from the University of Colorado.

Forever the teacher, Nielsen was instrumental in making SDSU an official test site for American Math Competitions and assisted the coordination of Math Counts, a high school math competition.

As an advisor to the Fellowship of Christian Home Education Students, he coached fellowship teams in 2004, 2008, and 2009 that placed at the state competition, with one individual qualifying for the national competition in 2004 and 2009.

Nielsen, who calls "math the foundation for many different areas," observed his last official day at work January 10. Since then,

he has been taking his time clearing his office of the vast array of books and articles accumulated over the years.

"I always thought I'd teach until they rolled me out on a gurney," he says. "I'm going to miss it. I will probably suffer from withdrawal because I love to go in and lecture to my students."

MARY TOLLE, a soft-spoken assistant professor of engineering technology and management, will call it quits in May after twenty-three years of service.

A native of Colorado, Tolle was initially employed in the Department of Mechanical Engineering as an assistant professor for three years before moving to the Department of Engineering Technology and Management. Before going full time, she was a graduate teaching assistant and an adjunct instructor in mechanical engineering.

She has been the faculty advisor for the student chapter of the Society of Manufacturers Engineers and has worked with College recruiting events designed to attract high school girls into the engineering profession. In addition, she has served on the Briggs Scholarship selection committee.

"The years here at SDSU have been very good," says Tolle, who primarily teaches computer aided design courses. "Certainly, being involved with the students through the years has been a real pleasure, especially seeing them come in as freshmen and then go out as young professionals with lots of opportunities. I'm very proud to be part of their lives."

She calls moving into renovated Solberg Hall in 2003—one of the most historic

structures on campus—"a very exciting event because the Engineering Technology and Management Department came together in one building after being scattered across campus in different offices."

Tolle earned all her degrees at SDSU: bachelor's in mechanical engineering (1983), and master's in engineering (1987) and industrial management (2004).

Joining her in retirement is husband, Gordon, who steps down in June after forty-five years in the Political Science Department.

"We both like to travel internationally," she says. "I enjoy long-distance bicycle tours, so I will probably be doing more of that. We also will be spending more time with family."

MYLO HELLICKSON will close the academic door to SDSU in June after forty-three years with the University.

He is a professor of agricultural and biosystems engineering in the College of Agriculture and Biological Sciences. He served as department head for six years and was associate dean of the college for ten years.

When he officially retires, Hellickson plans to stay in Brookings, because "I love this area," he says. "The people of this state are honest and hard working. It's reflected in our students, who understand a good work ethic as they pursue an education here. It's been wonderful working with the people of this University and students in the classroom."

Hellickson, who specializes in the area of livestock structures and environment with emphasis of solar energy use in agriculture, is a well-recognized face outside the academics world.

Since 1977, he has served as SDSU's athletic faculty representative to the NCAA and has been chairman of the Athletic, Intramural, and Recreation Committee on campus. He also filled in as interim athletic director from January to May 2009 when

Fred Oien retired until the appointment of Justin Sell.

"Being involved in athletics has been a dream come true," says Hellickson, who can be seen at the scorer's table running the thirty-

five second clock during SDSU men's and women's home basketball games. "I'll continue to run the clock because I love to stay in touch."

It's been his experience in the classroom, though, that has brought him his greatest satisfaction.

"One of my biggest highlights has been senior design students and working with engineers and industry," he says. "To see the results become commercialized has been rewarding. Introducing them to the whole design process has been very gratifying."

A native of Medora, North Dakota, Hellickson earned a bachelor's degree in agricultural engineering from North Dakota State University in 1964, followed by a master's degree in agricultural engineering from NDSU in 1966, and a doctorate in engineering at West Virginia University in 1969.

In 1990, he received the Meritorious Service Award from the North Central Conference.

PAT EMMONS started out with a one-year temporary appointment in 1997 and every year his contract was renewed until now; that's because the assistant professor of civil and environmental engineering is retiring effective May 21.

"There was no guarantee that I would be here year-in and year-out," says Emmons, who plans to turn part-time work as a real estate agent into a full-time gig with Schwebach Realty in Dell Rapids once he leaves SDSU.

Actually, Emmons will be retired twice. Prior to SDSU, he spent twenty-three years as a hydrologist for the United States Geological Survey.

Emmons contacted Vernon Schaefer, director of the Northern Great Plains Water Resources Research Center at SDSU (now the Water and Environmental Engineering Research Center) to assist putting together a demonstration project on artificial recharge in Huron. Through a series of events, Schaefer took the lead on the project and Emmons was appointed as an adjunct professor in the Civil and Environmental Engineering Department.

New faces added to Dean's Advisory Council

Advisory Council

Two new members have been added to the Dean's Advisory Council in the past year. The council will gather for meetings all day May 1 and the College of Engineering Awards banquet that evening.

The newcomers are profiled below.

As an ag engineering major, **WANDA REDER** '86 thought she would be working for a rural electric cooperative: little did she know this degree would distinguish her in the field of electrical engineering.

The daughter of a West River rancher, Reder has become vice president for the Power Systems Services division of S&C Electric of Chicago, a privately held, global provider of equipment and services for electric power systems.

She is the immediate past-president for the Institute of Electric and Electronic Engineers' Power & Energy Society and has served on the governing board since 2002.

A recognized leader in the industry, Reder serves on the U.S. Department of Energy's Electricity Advisory Committee, which is an appointment by Secretary of Energy Dr. Steven Chu.

It was a summer 1985 internship with the National Rural Electric Cooperative Association in Washington, D.C., that sparked an interest in electrical distribution, where most of her twenty-seven-year career has been devoted.

From 1986 to 2001, she worked with

Minneapolis-based Northern States Power Company (now Xcel Energy). Prior to joining S&C in 2004, Reder was with ComEd Energy Delivery, a subsidiary of Exelon Company.

RICHARD "DICK" GUSTAF, who grew up in Sioux Falls, joined an architectural engineering firm in Minneapolis after graduating from State in 1973 with a mechanical engineering degree.

He worked there as an HVAC design engineer for four years. In 1977 he joined TSP in Sioux Falls. Gustaf became the TSP mechanical engineering department head in 1984 and a partner in 1989. In 2004 he was appointed chief executive officer.

TSP now is a 120-person architectural, engineering, and consulting firm located in five upper Midwest states. The firm is responsible for the design of $200-million worth of construction projects annually.

In December 2008, Gustaf retired as a lieutenant colonel with thirty-one years of service in the Air National Guard.

While serving as commander of the 114th Civil Engineering Squadron, his unit was activated in March 2003 and sent to

Joint Engineering Council

benefits from leader's maturity

Who among us wouldn't relish the idea of going back to college? There, armed with more maturity and a better perspective, it would be possible to get it right this time.

That's what's happening for Ken Lewno, who's back in school at age 44, getting grades that seemed out of reach his first time around and embracing more responsibility as the president of the Joint Engineering Council.

The council, too, is experiencing a renaissance with higher visibility within the College and record attendance at its meetings.

'The cream of the crop'

The Joint Engineering Council includes one representative from each of the student organizations within the College: honor societies, professional groups, fraternities, and sororities.

"It's really the cream of the crop of student leadership in the College of Engineering," says Dean Lewis Brown, who serves as the council's adviser. "They take the lead in organizing all of our major outreach events."

Those events include job fairs in October and February, the phonathon at the end of January, and the Engineering Expo in April.

Council meetings are enjoying record attendance. In his ten years as dean and adviser to the council, Brown can remember times when the group's meetings were lucky to draw seven students. Now there are regularly twenty-four or more.

"It's been a number of things that have come together to make JEC a fun and exciting thing to do," Brown says.

Leadership key to success

According to Brown, the council's student leadership goes a long way toward generating interest in the group. He points to the 2004-2005 school year when Paul Bezdicek was the council's president.

"He could walk into a room of students and really get students excited about the Expo or the phonathon," Brown recalls. "Under his leadership, we made a big change in JEC."

Brown also credits the formation of two student organizations for young women: the Society of Women Engineers and the Alpha Omega Epsilon sorority.

"They really got fired up about recruiting new members," Brown says.

The dean also has plenty that's good to say about Lewno, the current president.

"He has fabulous industry experience in project management and leadership," Brown says of the nontraditional student. "He's helped raise the planning level."

Sometimes students just show up

While each organization in the College sends a representative to the council meetings, other students just attend because they're interested in what's going on.

"We always tell them, come along, bring a friend, the more the merrier," Brown says.

One of the students who attended a meeting because he was interested was Ken Lewno.

"Every opportunity JEC has to interact, we're trying to make sure we put our best foot forward and help as much as we can. If you don't try to improve, you're not leaving your fingerprint on things."

—Ken Lewno, president, Joint Engineering Council

"I was very interested in getting involved," says Lewno, who's been going to council meetings for a little over a year and currently serves as the president.

By all accounts, Lewno's tenure as council president doesn't peg him as a caretaker or a resume builder. He's there to make a difference.

"Every opportunity JEC has to interact, we're trying to make sure we put our best foot forward and help as much as we can," Lewno says. "If you don't try to improve, you're not leaving your fingerprint on things."

Lewno's fingerprints were all over the phonathon where, as chairman, he spent every evening for a week and all day Saturday and Sunday at the event. In February he cochaired his third job fair, sharing the duty to make sure new leaders can take responsibility after he graduates.

"You want to really pass on that knowledge so we're making it incrementally better each time we have a job fair," Lewno says.

A long road back to college

This isn't Lewno's first brush with job fairs, the phonathon, or engineering classes. He initially went to school at SDSU in 1992-1996. His first tenure at State ended when he went through a divorce. His grades suffered and he dropped out.

Lewno landed at Rainbow Play Systems in Brookings where, for the next fifteen years, he served in a variety of roles including director of sales and strategic project manager. He started two retail operations for Rainbow in Montana and Nebraska.

Just as one life-altering event—his divorce—ended his college career, another life-altering event sent him on the road back to SDSU. In September 2009 he and his wife were both laid off by Rainbow.

"Now that was an economic downturn," Lewno says.

continued next page

Opposite page: A record sixty companies filled the Volstorff Ballroom February 16 for the Engineering Job Fair, which was organized by the Joint Engineering Council.
From top to bottom: Ken Lewno presides at a meeting of the Joint Engineering Council.
Kanoa Baynard, left, recruiting services manager with Schwan Foods, Marshall, Minnesota,

Kanoa Baynard, left, recruiting services manager with Schwan Foods, Marshall, Minnesota talks with Danard Riggs, a senior mechanical engineering student, at the job fair.

Baynard talks with Genshung Zhang, left, and Pei Yi Xiao, graduate students in computer science, at the job fair.

Approaching college with maturity, envy

With Lewno and his wife both out of work, big decisions had to be made. Lewno decided to return to SDSU for his engineering degree. When the gas station next door to their home in White came up for sale, they bought it. Lewno's wife handles the day-to-day management.

Lewno will graduate in May with a degree in manufacturing engineering technology. He originally studied mechanical engineering.

"I found I was more of a process-oriented person rather than design-oriented," Lewno says, crediting the change to his years of project management at Rainbow. "That's what I was more passionate about."

After he graduates in May, Lewno is headed to graduate school at State to seek a master's degree in industrial management. Once again he's likely to be significantly older than his peers.

Age has given Lewno a new perspective on what's important. A "C" student his first time at State, Lewno has earned his way on to the Dean's List the last two semesters.

"That is something that I'm proud of," Lewno says. "Your focus is different when you're 44 than when you're 21."

When Lewno looks at the students in his graduating class, he admits to being a little jealous.

"I'm very envious of their position because they're just starting out," Lewno says, "but it's a new chapter in my life, too."

In the meantime, Lewno will serve out his term as council president, trying to leave his imprint on the organization as he shares his project management experience with classmates.

"I just want to give some of my experiences and bring that to these organizations," Lewno says. "I'll pass it on to the students so they know that you're going to use that kind of experience."

Dana Hess

Council experience builds leaders

One Hobo Day Dean Lewis Brown had one of those experiences that educators cherish.

He met two College of Engineering alumni who had both served on the Joint Engineering Council. Both emphasized to Brown what an impact serving on the council had made on their lives.

"Many of those students become leaders," Browns says of the council membership. "It's kind of blossomed into something that's pretty neat."

Here's a roster of the Joint Engineering Council presidents:

Years	Name	Major
2011-12	Kenneth Lewno	MNET
2010-11	Andy Neary	MNET
2009-10	Andy Neary	MNET
2008-09	Seth Hohbach	ABE
2007-08	Jon Rauenhorst	EE
2006-07	Seth Cooper	EE
2005-06	Seth Cooper	EE
2004-05	Paul Bezdicek	ME
2003-04	Nick Harrington	ME
2002-03	Todd Nelson	ABE
2001-02	Brad Hakeman	MNET
2000-01	Justin Artz	EE
1999-00	Jon Schultz	ME
1998-99	Mathew Klein	EE/EP
1997-98	Matthew Asche	EE/EP
1996-97	Monte Klinkenborg	EE
1995-96	Terry W. Boon	EE
1994-95	David Dovre	AE/Food Bio
1993-94	Michael Hubbard	ME
1992-93	Carmen Dunn	ME
1991-92	Robert J. Anderson	CE
1990-91	Troy Erickson	ME
1989-90	Carmen Fink	CE
1988-89	Susan Quam	EE
1987-88	Richard Heitkamp	CE
1986-87	Kim McLaury	CE
1985-86	Donald Ufford	AE

Jasinski
took learning, leaping to new level

Ben Jasinski came to see life from a higher perspective during his five years at South Dakota State.

The electrical engineering major from Rapid City Central was recruited to State as a member of the track and field team. He went from high jumping six foot, six inches in high school to a Jackrabbit record of 7-1 in college.

Academically, he really soared.

He finished with a 3.80 grade point average, made three different academic team selections in track, and earned a $7,500 postgraduate scholarship from the NCAA, one of 174 given out annually to male and female athletes at all NCAA levels.

But it was Jasinski's work in the College's Image Processing Lab that really gave him a different perspective.

For two years he worked in Dennis Helder's lab as an undergraduate researcher working with imagery from six Landsat satellites. "My job was to help put all these six satellites on the same calibration scale," says Jasinski, who coauthored a professional paper on the work.

The oldest of the satellites dates back to 1974, so there is a huge historical record contained in the images, he says.

He worked at the lab full time during the summers and would usually spend ten hours per week during fall semesters.

The work is causing Jasinski to think about a career in image-processing research. Right now the May 2011 graduate is using his NCAA Postgraduate Scholarship to pursue a master's degree in physics at the University of South Dakota in Vermillion.

Reaching for a dream

He also is working as a graduate assistant with USD track and field, and pursuing his own jumping goals.

It is his dream to be able to qualify for the U.S. Olympic Trials in June in Eugene, Oregon. Only a few years ago, such a dream seemed as far out as a Landsat satellite, but that changed in 2009, his junior season. "I started PRing like crazy," Jasinski says of the personal records he set in the triple jump, high jump, and long jump.

By the time he had graduated, Jasinski held the school record in the indoor and outdoor high jump and the heptathlon.

The minimum Olympic Trials qualifying standard is 7-2 in the high jump and 52-6 in the triple jump. Jasinski is banking on a good outdoor season to hit the marks. The unattached competitor has hit 7-0 this winter and notes he traditionally does better outdoors.

In the triple jump, his top mark remains the 51-3 set at the Howard Wood Relays May 1, 2009.

Overcoming injury

Following that breakout spring, Jasinski redshirted during the 2010 indoor season. The week before the 2010 outdoor season began he pulled his hamstring. That not only cost him the season, it cost him the momentum he had built up during his redshirt season.

Battling back from the hamstring injury during his senior year, Jasinski approached the fifty-foot mark in the triple jump (49-9), hit 7-00.25 in the indoor high jump and 7-1 in the outdoor high jump as well as setting the heptathlon school record.

"I've had a chip on my shoulder ever since I pulled my hamstring. I just want to see what my limits are," Jasinski says.

Should he reach the Olympic Trials in Eugene, it won't be his first time to compete there. In June 2009 he competed there for the USA Championships, qualifying with his 51-3 triple jump. "It was a huge deal for me. The world champion was there," he recalls.

He also recalls that he scratched on his two biggest jumps of his life. Both would have been fifty-two feet and put him in the finals.

Jasinski got a qualifying mark on his third effort, but it was considerably shorter. So the middle child of two former college athletes is chasing the what-if. In 2008, Jasinski went with his parents, Jerry and Royaune, to watch the Olympic Trials while on vacation.

He would love to see his parents there again this summer with it being a working vacation for himself.

Dave Graves

Ben Jasinski strains for every inch he can reach in the Summit League triple jump at the 2011 meet in Sioux Falls. The senior finished second with a leap of 49-02.5. He won the high jump with a 6-09.5 leap. The electrical engineering graduate is now pursuing a master's degree in physics thanks to a NCAA Postgraduate Scholarship.

Picking the right lab partner

Carrying a 3.80 GPA means there aren't too many others in the class who you can lean on for help.

But Ben Jasinski, a May 2011 electrical engineering graduate from Rapid City, found someone in classmate Tyler Duffy, of Brookings, who graduated with a 4.0 GPA. The pair also share the bond of Division I athlete. Jasinski in track and field. Duffy in football.

"We were lab partners for most of the classes," says Jasinski. They both completed the program in five years.

"We had an agreement. I would take care of the fall and he would take care of the spring as far as learning material" since their busy seasons athletically were opposite of one another, Jasinski says.

Dave Graves

SAE formula car

Formula car project takes drive, determination

This project puts the "extra" in extracurricular. Imagine working on a project throughout the academic year or longer, then hauling the project to California for a competition against schools from across the country and around the world. Then doing it all over the next year.

That's the regimen followed by the Wild Hare Racing Team, the SDSU chapter of the Society of Automotive Engineers whose members compete in the national organization's formula car competition.

"This event has a lifelong impact on careers and values," says adviser and Associate Professor Shawn Duan, relaying what alumni have told him about the formula car competition's effect on their lives. "It's a very valuable experience to enhance their motivation."

The formula car competition takes miles of motivation, all right.

In the contest, a fictional manufacturing company has contracted with a design team to develop a small formula-style car for nonprofessional, weekend autocross racers. The prototype car will be evaluated for its potential for production. Automotive manufacturers and racing teams supply the judges for the competition.

For the competition, the SDSU chapter breaks the year into thirds: design, build, and test. Each year, the project starts from scratch as students design a car; build it from donated, purchased, or fabricated parts; and put it through its paces to ensure that it will stand up to the rigors of the competition.

Trading California for Nebraska

The event run by SAE International, formerly the Society of Automotive Engineers, traditionally held its contest at two North American sites: Fontana, California, and Brooklyn, Michigan.

The SDSU chapter competed in California. As much as students liked the idea of a trip to California, getting enough time off from summer jobs to haul a car halfway across the country and back proved to be problematic at times.

SDSU's participation at the contest will likely increase in the future with the closing of the California site and the opening of a new contest site at Lincoln, Nebraska.

Throughout the year the SDSU chapter has heavy student participation. There are thirty-nine students signed up to work on the car in 2012 with about a dozen who form the core project group.

The project has an operating budget of $40,000 that includes $8,000 from the Students' Association and $4,000 each from the College of Engineering and the Mechanical Engineering Department.

Darin Waldner, a May 2011 mechanical engineering graduate, drives in the 2011 endurance contest at Fortuna, California.

Opposite page
Jordan Richter, left, and Kyle Finn show off the formula car that the Wild Hare Racing Team took to the 2011 Society of Automotive Engineers' competition in California.

Duan explains that the Students' Association helps fund the project because it's not restricted to engineering majors.

"Consistently they give very, very strong support," Duan says of campus investors, "but the current challenge for us is funding."

Students also turn to their hometown business community for sponsorships. Industry supporters of the project also include POET, Twin City Fan, Kooima, Industrial Machine Engineering, and Mack Steel.

Small school, big expectations

Competing nationally since 2001, the SDSU chapter hasn't let its small size or limited funding stand in the way of success. Adviser and Assistant Professor Stephen Gent notes that a smaller team means that each student makes a greater contribution and while the project's budget is small compared to its peers, that can make the team more resourceful.

"We were definitely one of the smallest teams there," says Gent. He notes that Oregon State University had a thirty-member team at the last competition that included fifteen graduating seniors.

Being small, however, can have its advantages.

Last year many contestants and judges were complimentary of SDSU's car and its clean design. The clean design gave the team an eighth-place finish, one place away from the finals in the respected design event.

Jordan Richter, a senior mechanical engineering major from Sioux Falls, says the design was simple for a reason. "Since we're a smaller team with a smaller budget, we need to keep it simple," Richter explains.

The competition's chief design judge traditionally has a racing background.

"It's really interesting to get their perspective on something you design," Richter says.

Thorough judging takes four days

The contest gives each entry a comprehensive going over and a brisk workout. The first two days are static events: a technical inspection, a presentation on design, a cost analysis, and a business presentation to judges posing as investors.

About eighty teams bring their cars to the competition. Usually between fifty and sixty cars make it through the technical inspection. Those numbers were reflected at the 2011 competition, where SDSU finished in thirty-ninth place among sixty-one competitors with another nineteen teams that withdrew or forfeited.

The next two days consist of dynamic events: skid pad, acceleration, one fast lap on the autocross course, and a twenty-lap endurance race.

The built-from-scratch car can go from zero to sixty in 3.5 seconds and can hit about seventy miles per hour on the track.

The endurance race is twenty laps on the autocross course. After ten laps, the car must be pulled in, the engine shut off, and a new driver will try to restart the engine and complete the laps. Some cars won't restart when the engine is hot.

"It's pretty tough on the cars," says Richter, who notes that the cars are judged on fuel economy after the endurance test.

SDSU recently started using E-85 fuel due to the benefits of ethanol and a sponsorship from POET, a South Dakota ethanol company. The switch has resulted in increased power.

"They're taking advantage of the properties of the fuel by modifying the engine," Gent says.

Praise from students, advisers

Working on a project from the start of the school year in late August until the contest in June may be wearing, but it's also gratifying.

Kyle Finn, a senior construction management major from Webster and a project manager at Daktronics, says the formula car competition has helped him at work.

"It's helped me with time management, organization, and dealing with subcontractors," Finn says.

"It's just as much project management as it is engineering to build a car," Richter says. "It really helps all across the board. What we're doing here is what we would be doing if we were running our own company."

The scope of that experience isn't lost on the judges who come from the automotive and racing worlds.

"They go specifically to recruit people in this competition," Richter says.

The entire experience, according to Gent, is priceless. "It's very difficult to replicate this experience in a traditional classroom environment," Gent says.

Car helps promote engineering, SDSU

There's another aspect of the competition that's important for the College and the University.

"It's a standout promotion to attract students to SDSU," Duan says, noting that the formula car and the students who design it make appearances at College events, Junior and Senior Days, and regional car shows.

According to Duan, the car gives prospective students a concrete example of what they can accomplish at SDSU.

"Students can understand what engineering can do," Duan says.

Dana Hess

More on the Web

Find out more about the Wile Hare Racing Team at the team's website: **http://studentorgs.sdstate.org/SAE.**

Learn more about the SAE International formula car

Quarter-scale tractor

Tractor contest results in enhanced skills, industry contacts

Members of the SDSU chapter of the American Society of Agricultural and Biological Engineers are certainly a capable group. They were able to build a quarter-scale tractor from scratch as well as whip up some award-winning pork kabobs.

Both accomplishments were part of the group's participation in the International Quarter Scale Tractor Student Design Competition in June 2011. Taking part in the competition was as challenging as the kabobs were tasty.

The first challenge students faced was that the chapter hadn't sent an entry to the national competition in Peoria, Illinois, since 2004. Consequently, none of the current crop of students had ever taken part in the contest.

During the 2009-2010 school year, members built a tractor but didn't think they were ready to enter the competition. The next year was a different story and chapter adviser and Professor Daniel Humburg is quick to cite the leadership of Seth Spronk.

"What it takes to make it successful is some students with leadership skills," says Humburg who has been advising the chapter for ten years. "Seth was probably the force behind the effort."

Student-led project faces challenges

His time as team captain provided the Edgerton, Minnesota, senior with some real-world management experience.

"Managing people is a challenge," says Spronk who didn't have the power of a paycheck to hold over students who missed deadlines or didn't show up to work on the project.

According to Humburg, the fact that the project is student-led at SDSU makes it different from many of its peers. At other universities, portions of the project can be used as a senior capstone design project. If the project is part of the students' coursework, a professor can set deadlines and have the authority to ensure that they are met.

"This is an entirely student-run effort," Humburg says. "That's one of the challenges we face."

Another challenge is funding. The volunteer efforts of the students and donations from sponsors make it tough to put a finger on the project's total cost, but Humburg estimates it's thousands and thousands of dollars.

Last year Twin City Fan of Brookings fed the students' design files in its computer to laser cut the sheet steel. When it could, the company also formed the steel for the students.

Many of the students seek sponsorships from their hometown businesses and the College of Engineering and the College of Agriculture and Biological Sciences help pay for travel expenses.

"We do this on a shoestring compared to the people we compete against," Humburg says. "Our support is much appreciated, but much more modest."

Opposite page: The tractor pull is one of the highlights of the International Quarter Scale Tractor Student Design Competition held yearly in Peoria, Illinois.
Above: Members of the SDSU 2011 quarter-scale tractor design team pose with their tractor at the competition. Stickers on the tractor are a way of thanking the program's main sponsors.

Project open to all majors

Efforts to keep SDSU's participation in the contest going from year to year may help with attracting more donations.

"It's very hard to get industry support without progress," Spronk says.

The chapter hopes to keep its program going by ensuring that the experience it has gained in the tractor design contest isn't squandered. Spronk is involved in the contest again this year, but he has cut back on the fifty to fifty-five hours per week he put in when he was the captain.

In an effort to maintain continuity, underclassmen have been moved into positions of responsibility.

"It's all about having the manpower," says Spronk, who estimates that sixteen students worked on last year's project and eight of those students formed the core team.

Students from all majors are welcome to help with the project. Students from majors as diverse as agricultural engineering, agricultural systems technology, mechanical engineering, agricultural education, political science, and animal science have helped with the project.

"If you have a farm or mechanical background, we can use you," Spronk says.

Tractors judged from all angles

The competition itself is a learning experience for students as the tractor they have built from scratch is judged on a wide variety of levels. Many of these tests are safety-related as the brakes are checked for their ability to hold the tractor on an incline, the exhaust is tested, and the machine must have adequate guards around all rotating parts.

Industry engineers consider building methods, cost-effectiveness, and attractiveness as they judge each tractor's design.

"Students get a lot of feedback to help them understand how things are done in industry," Humburg says.

The tractors must also go through a maneuverability course. According to Humburg, students find out that a tractor that pulls well does not necessarily maneuver well.

Students also write a design report and make a verbal presentation to the judges. SDSU's verbal presentation earned third place.

"They did an outstanding job of that," Humburg says. "That moved them up in the competition."

"The judges said they had no idea it was our first time," Spronk says.

Overall, SDSU placed ninth out of twenty-one teams with rankings of tenth place in the design report and ninth place in the tractor pull.

The highlight of the competition is the tractor pull.

"It truly is fun to watch," Humburg says, recalling that last year three tractors had to be carried off the track. "The machines are pushed to the limit."

Bringing home the hardware and the cookware

The competition is traditionally known for its camaraderie. That includes a cook-off that the SDSU team won with Spronk's recipe for pork kabobs. A six-inch commemorative cast-iron skillet was awarded for the team's culinary success.

Spronk went into the tractor design competition thinking it would have a cutthroat atmosphere. He was wrong.

"It's a tremendous group of guys," Spronk says. "We borrowed stuff from about half a dozen different teams."

After each day's judging was done, teams gathered in the lobby of the Peoria hotel where they stayed and talked about their projects and their prospects.

"It's not just the students; it's the officials as well," Spronk says. "They're looking for the next group of innovative or skilled engineers to come in and work for them."

Humburg says that people in the tractor industry speak highly of the competition. "They say it's a pretty good measure of the students," Humburg says. "They know the scale of the project and they're looking very hard at the students."

Spronk wants to eventually return to the family farm, but in the meantime he foresees being able to land a job in the power machines field. He has an eight-month stint at Bobcat lined up after graduation as well as contacts with Caterpillar and CNH, the maker of Case IH and New Holland.

Those industry contacts, he says, "are one of the coolest things about the competition."

Dana Hess

ice skating engineer has best of both worlds

"It's been a very good life so far. I'm extremely happy with where I'm at right now. I have the best of both worlds."

– Emily Miller

For most of Emily Miller's young life her performances have been electrifying.

In the classroom, her efforts have produced a stellar 3.85 cumulative grade point average. The Sioux Falls senior, who will graduate in May with a degree in electrical engineering, is quite clear on what she will do next.

"I'm going into the workforce for a couple years and come back and go to graduate school," she says. "My ultimate goal is to get my doctorate and become a professor in electrical engineering."

Miller's college tuition is partially paid for—not only for her academic excellence as one might expect—but for her athletic prowess as well. You see, she was one of two recipients across the nation to receive a four-year national scholarship from the Ice Skating Institute.

Ice-skating?

Yes, the future engineer is an ice skating princess and she's pretty darn good, too.

Throughout her elementary, middle school, and high school years, Miller went to more than thirty ice skating competitions, mostly in Minnesota.

However, the biggest event was the Ice Skating Institute Team Recreational World Championships, which attracts skaters from all over the world, she says. Her first try came at age ten in Blaine, Minnesota, where she earned fourth- and fifth-place finishes. At fourteen, she picked up three seconds and one third. The grand finale came as a senior in Denver, where she notched five first-place gold medals and one fourth.

Teaching the youth

Despite the success at the Ice Skating Institute events, Miller never anticipated receiving such a generous scholarship or even getting one when going through the application process.

"When I got the letter, I was shocked," she says. "There are so many deserving recipients throughout the country. I was very honored and surprised."

Miller continues to skate, maybe two or three times a week at Larson Ice Center in Brookings. She notes college students invariably have various hobbies and interests, and admits an engineering major who excels on the ice rink is a rather odd combination.

"People say, well, that's interesting, we typically don't see that. But, I enjoy both so I just say, 'yes, it's odd, but I like doing them.' "

Away from the classroom, Miller has another passion: teaching young skaters the fine art of figure skating through the Brookings Park and Recreation Department and the learn-to-skate program for the Brookings Figure Skating Club.

"I love seeing kids developing a new interest that they have been working very hard on," she says. "It's so rewarding and brings you so much joy knowing they are learning and having fun."

Call to serve

The Brookings community has benefitted from Miller's decision to enroll at SDSU and will no doubt feel a void when she leaves.

"When I came here as a freshman there were very few kids who went to competitions. I started with a couple students and now we have about ten to fifteen skaters going to competitions. I'm proud being a part of their lives and I'm really going to miss them."

In addition to skating, teaching, and earning a degree, Miller has served on different student organizations: vice president of the Institute of Electrical and Electronic Engineers; electrical engineering honor society Eta Kappa Nu; Society of Women Engineers; Golden Key Honor Society; and Phi Kappa Phi Society.

"It's been a very good life so far," says Miller. "I'm extremely happy with where I'm at right now. I have the best of both worlds."

Kyle Johnson

Fairlawn

Engineering students aid cemetery restoration

"Those civil engineering kids were phenomenal. I don't know what we would have done without their help."

– Eileen Gilbertson, Fairlawn Cemetery Board member

Their shanties may have crumbled, their property disposed of, and their land sold, but the history of the pioneers lives on in local cemeteries through the stories told on headstones.

At Aurora's Fairlawn Cemetery, the pages to that history book had become tattered over time and were in need of renovation.

"It was a small-town cemetery in dire need of repair," says Ilene Gilbertson, a Brookings businesswoman and a member of the Fairlawn Cemetery Board. Most of 2011 was dedicated to restoring the cemetery one mile east of Aurora on Rasmussen Street.

Vegetation was brought under control, landscaping was put in, and the headstones were restored to their former beauty.

The cemetery board oversaw the project, but it was the Boy Scouts who scrubbed lichen and bird droppings off old tombstones in the summer and a group of SDSU engineering students who reset tilting headstones in the fall.

Gilbertson said cemetery board members now look with pride at what has been accomplished in a group effort.

Collegiate community service

The SDSU student chapter of the American Society of Civil Engineers undertook the tombstone project after being presented with the idea by Chuck Tiltrum, an Aurora resident, one of the chapter's advisors, and a retired SDSU faculty member.

ASCE members perform many community-service projects throughout the year and annually take on one major community-service project, but none had ever worked at a cemetery before.

John Miller, a senior from Plymouth, Minnesota, and community-service chair for the civil engineering group, had visited the cemetery earlier in the fall with another club member to survey the work and identified about twenty-five headstones in an older section of the cemetery that needed attention.

A crew of ten ASCE members and Tiltrum arrived at Fairlawn Cemetery on the morning of October 15 and put in a full day's work.

Engineering expertise required

"Each tombstone had its own problem," Miller says. The club used a Bobcat to lift about ten headstones and reset the tombstones on a freshly compacted sand-and-gravel base. For some tombstones, the tombstone had been set on clay soil that had consolidated through the years causing one side to settle, resulting in a crooked tombstone.

For other tombstones the concrete footings and bonds had crumbled throughout the harsh freeze-thaw conditions. Each tombstone required restoration in its own unique way, Miller says.

"The headstones shouldn't settle any more. We were trying to make permanent solutions for them," Miller says.

In the cases where the stone or concrete base for the headstones had eroded from harsh conditions, fresh concrete was placed to restore the tombstone back to its original form. "We replaced the old concrete using much stronger concrete than what was available in the 1800s," Miller says. In other cases, the monument had simply fallen off its base. So members used a chisel to remove the excess material in order to allow for better bonding and applied epoxy to cement the stones together again.

Miller says the work gave members a chance to use their construction skills in a different setting and help the Aurora community. "The majority of the stones are erect and stable."

Gilbertson remarks, "Those civil engineering kids were phenomenal. I don't know what we would have done without their help. That is an expertise no one on the cemetery board has. They were so professional, so courteous. Not one stone got damaged."

And the students learned a little community history in the process. "A lot of them were reading the headstones and the dates," she says.

Dave Graves

Top: Chris Kuhl, left, and John Miller, members of the American Society of Civil Engineers at SDSU, steady a headstone as it is placed on a new base at Fairlawn Cemetery October 15, 2011. The student chapter straightened twenty-five headstones in the Aurora cemetery as a community service project. Also pictured are Tevis Holzer, left, and Lee Gilbertson, of Aurora, in the Bobcat.
Inset: Resetting the base for a headstone at Fairlawn Cemetery are, from left, John Miller, Tevis Holzer and Todd Pauly.

Student News

NEW SCHOLARSHIPS POWER FOUR EE MAJORS

Four future engineers received recognition from the Center for Power Systems Studies at its awards banquet at SDSU October 17, 2011.

Receiving a new $2,000 scholarship from a national engineering organization were electrical engineering majors juniors Richard Fitzpatrick, of Foley, Minnesota; Jeremy Nelson, of Brewster, Minnesota; and Ryan Kleinjan, of Lake Norden; and Cole Sandness, a sophomore from Woonsocket.

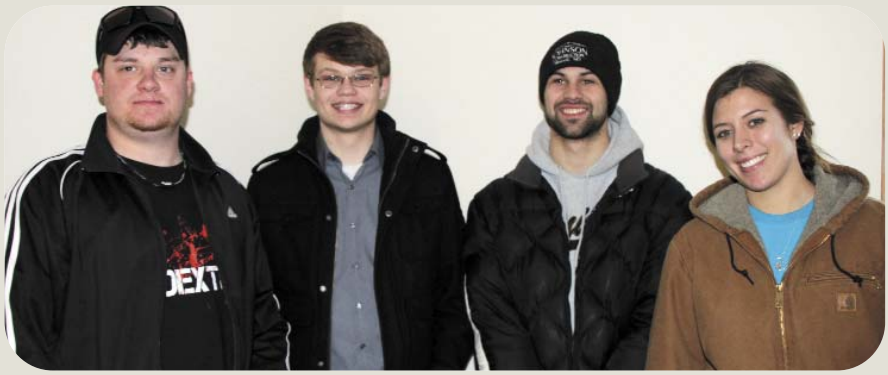
The scholarship recipients were selected from more than 700 applications nationwide. A total of ninety-two Scholarship Plus Initiative awards were distributed to scholars at fifty-one universities with funds from the Institute of Electrical and Electronics Engineers and industry partners.

Steve Hietpas, head of the Electrical Engineering and Computer Science and coordinator of the Center for Power Systems Studies, says only three universities had more selections than SDSU and most schools only had one selection. Of the region's seventeen selections, four went to SDSU students.

The center is within the Electrical Engineering and Computer Science Department at SDSU. It is dedicated to teaching students through direct involvement with the power industry and providing educational opportunities to engineers in the power community.

The scholarships were presented by 1986 alum Wanda Reder, who was selected as Distinguished Engineer by the College of Engineering in 2007. The long-time power industry executive served as president of the Power and Energy Society of the IEEE in 2009.

It was Reder's work that established a $2.45-million scholarship fund to attract



CONSTRUCTION CLUB BUILDS HABITAT HOUSE

Members of the dedicated Construction Management Club donated 1,427 hours of labor in the construction of the forty-seventh Habitat for Humanity home in Brookings.

Ground was broken September 23, 2011, for the home at a corner lot at Fifteenth Street South and Pactola Cove with the dedication Feb. 27. "We're proud of our students for supporting the community," says club advisor Norma Nusz-Chandler, an instructor in Engineering Technology and Management.

This is the fifth year in a row that the club has worked with other Habitat volunteers to build a house.

Nusz-Chandler notes that this year's project included the concrete driveway and sidewalks. Students turned to others for the finish work, but they were able to help with electrical.

The eighteen club members worked evenings, weekends, and between classes under site supervisors Brandon Sanderson, John Moisan, Joe Leimer, all club members.

The Construction Management Club also is tabbed to build the fiftieth Brookings Habitat house with groundbreaking set for the week of

ADAM CARLSON, a senior from Morgan, Minnesota, was one of three national recipients of a $7,000 scholarship given by the Society of Manufacturing Engineers for the 2011-12 school year. It was awarded June 6 at the society's 2011 international awards gala in Bellevue, Washington.

Carlson, who is seeking majors in manufacturing and engineering technology and industrial management, holds a 3.9 grade point average. He plans to pursue a manufacturing career by opening his own business working with boats or motorcycles, two of his personal passions.

CASI HUIZENGA, a senior mechanical engineering major from Pierre, received the $2,500 NASA South Dakota Space Grant Consortium Scholarship for 2011-12. Her future plans include pursuing a master's and doctorate in biomedical engineering.

GAMMA RHO STREAK HITS FOUR YEARS

For the fourth year in a row, Gamma Rho, the SDSU chapter of Eta Kappa Nu, the electrical and computer engineering honor society, was presented with an outstanding chapter award at the national annual meeting March 26 at the University of Texas in Austin.

Chapters are judged on their activities of service to others.

Gamma Rho honor students are involved in tutoring, promoting electrical engineering through assisting with department outreaches, organizing the Fundamentals of Engineering help sessions, working with sixth-grade science teachers and their students with a Faraday Flashlight project, and organizing the department fall awards banquet.

Members of the award-winning Eta Kappa Nu chapter at SDSU are, back row, from left, Seth McGill, Jesse VanOverbeke, Joel Braaksma, Tyler Duffy, Kevin Bullis, Collin Boots, William Wermers, Drew Waltner, Mark Mathews, Wes Davis, and advisor Steven Hietpas. Front row, Emilly Miller, Chaker Joanne, Sarah McMahon, Zachary Sanderson.

ETHAN MATHERN and **TODD PAULY**, both seniors, each received the $2,000 Tiney Scholarship for 2011-12 through the American Society of Civil Engineers. Only four of the scholarships are awarded annually.

DANIEL NEHLICH, a junior physics major from Sioux Falls, received a $10,000 stipend from the South Dakota Space Grant Consortium for a fifteen-week internship at the NASA Johnson Space Center in Houston.

After the internship, which began January 17, Nehlich plans to pursue a master's degree in astronautical engineering with an emphasis in propulsion technology. He then hopes to go to work for NASA or a commercial space travel company.

In his internship, Nehlich worked in the advanced physics propulsion lab on a system that produces an electric propulsion solution that relies on plasma moving through a magnetic field to provide thrust to move spacecraft.

STEPHANIE (PETERS) KLAY placed second out of fifty students that presented research at a retreat in Snowbird, Utah, in September 2011 for graduate students from six universities in the Mountain Plains Consortium.

Klay, who graduated in December 2011 with her master's degree in civil engineering, worked with Associate Professor Allen Jones and Professor Nadim Wehbe on corrosion mitigation of reinforced concrete pavements in South Dakota.

The presentations were judged by faculty and students at the event. The winning presentation was made by a doctoral student from Utah State.

The research project was cofunded by the South Dakota Department of Transportation and the consortium, which is a federally selected, eight-university organization that conducts transportation-related research.

ZACHARY ROTHSTEIN, a senior from Hutchinson, Minnesota, received the 2011 Student Leadership Award from the American Society of Civil Engineers.

Rothstein received the national award for his leadership and dedication to the SDSU student chapter.

Rothstein became involved with the student chapter as a freshman and has served as its freshman representative, vice president, and president. In addition, he captained the chapter's 2011 concrete canoe team and was the conference chairman for the 2010 ASCE Midwest Student Conference, which was hosted by SDSU.

Rothstein was nominated by chapter advisors Rich Reid and Chuck Tiltrum as well as faculty member Zach Gutzmer.

There are 121 members in the SDSU chapter and 28,500 student members nationwide.

TOM STRUBEL, a civil engineering and German major, and his partner, **LUKE RENSINK,** a dairy manufacturing and food sciences major took second place and earned $3,000 in the Governor's Giant Vision contest in spring 2011.

The seniors are partners in Heist Brewing Company, a microbrewery, which they started last winter in rented space in downtown Brookings.

MARK WAGER, a senior mechanical engineering student, competed at the 2011 American Society of Mechanical Engineering public speaking contest after winning the regional event.

Wager, of Gettysburg, won the Old Guard oral presentation competition at Lawrence, Kansas, April 16, and then was one of thirteen competitors at the international event in Denver. November 12.

His presentation was "Vibrational Analysis of an Electromechanical Toothbrush" and examined the validity of modeling the relatively new, disposable electric toothbrushes on the market using one-dimensional vibration models.

While the topic is technical, the judging does not cover the technical expertise of the material; rather, the speaking ability of the presenter to convey the technical subject to an audience of both inexperienced, student engineers and experienced, practicing engineers.

IBM Grant

will help interest female students in engineering

A $10,000 Community Impact Grant from IBM will help the College of Engineering's continuing efforts to attract more female students.

The grant was secured through the leadership of Becky Schmieding '78 who has been involved in the efforts to increase female enrollment since 2005.

Plans call for the IBM grant to be used for the purchase of thirty-one LEGO Mindstorm NXT 2.0 robotics units for use in the two workshops designed to interest female students in careers in science, technology, engineering, and

Becky Schmieding is not only a big fan of Jackrabbit basketball, she also is an advocate for female engineering students and helped secure a $10,000 grant aimed at attracting more female students.

DEAN'S CLUB

January 1, 2011 through January 31, 2012

Dean's club membership consists of alumni and friends who have contributed $500 or more annually to the College of Engineering. Dean's Club members are recognized as devoted friends of the College who make significant impact on the College's future. Member names will be listed in the SDSU Honor Roll and the College newsletters. They also will receive invitations to special College and University functions, updates from the College dean, and an SDSU Dean's Club car decal.

CLASS OF 1936
Emmett B. Myhre

CLASS OF 1938
Gerald G. Frick

CLASS OF 1947
James H. and Catherine S. Grommersch
Stanley J. Zimmer

CLASS OF 1948
Marilyn C. Anderson
LaVon Hall
Les Roberts

CLASS OF 1949
James W. Crothers
Wayne E. and Katherine J. Knabach

CLASS OF 1950
Rita M. Barnett
James O. and Arlene H. Martin
George W. Olsen

CLASS OF 1951
Glenn Nordmark
Kenneth A. and Mary Margaret Rowen

CLASS OF 1953
John M. Hanson
George E. and Bobbie Lohr
Harlow J. and Carol Miner
Archie D. and Ethel H. Wilcox

CLASS OF 1954
Deloris E. Jensen

CLASS OF 1955
Norman M. Iverson
Jack C. and Ellie E. Marshman
Gene A. Ninnemann
Glenn A. and Darlene Puncochar

CLASS OF 1956
Noel H. Egan
Mansour L. and Ruth Karim
Gustav N. Van Steenberg

CLASS OF 1957
Roderick B. Anderson
Raymond C. Chao
Richard A. and Eleanor J. Coddington
Charles N. and Shirley S. Reed
James A. and Kathleen A. Vellenga

CLASS OF 1958
Richard and Beth Berreth
Curtis D. and Phyllis E. Brudos
Ronald J. Bymers
Glenn DeGroot
Virgil D. Kempton
Clayton and Audrey Knofczynski
Ronald J. LaVallee
Jerome J. and Jolene M. Lohr
Cleyon L. Mulder
Bernard J. Peter
Fred J. and Ardyne M. Rittershaus
Joseph P. Vogel

CLASS OF 1959
Francis M. and Beverly A. Blaze
Burdette H. Dugdale
Adolph Fejfar
Glenn S. and Janice C. Gehring
Richard L. Gunderson
Burton and Gladys Horsted
Roger N. Iverson
Roy L. Jackson
John A. LaBrie
Gary L. and Jan R. Nelsen
Guy F. Rhoades
Lyle D. and Donna M. Solem
Ronald C. and Roberta R. Soren
Robert F. Troemel

CLASS OF 1960
Lyle L. Berg
Wallace J. Hoff, Jr.
Dallas G. and Janice M. Lien
Keith A. Lucke
Arlo R. and Janice L. Nord
James F. and Arline A. Olsen
Robert C. Olson
Robert G. Raymond
Wallace R. Stern
Thomas L. Weaver

CLASS OF 1961
Noel L. and Rita D. Christensen

mathematics. The robotic units may also be used for community outreach.

"This type of equipment really provides us with more exciting and sophisticated activities we can do for our workshop attendees," says Associate Dean of Engineering Richard Reid. "Robotics seems to be a popular activity among that age group."

Girls, Engineering, Mathematics, and Science, known as GEMS, is a workshop designed for eighth-grade girls to whet their interest in those subjects before they make their course decisions for high school.

The workshop for high school girls—Ready SET Go!, with SET standing for Science, Engineering, and Technology—introduces attendees and their parents and teachers to the opportunities for women in engineering.

Schmieding became interested in increasing female enrollment in engineering at State while working for IBM, and she's been a driving force for the one-day workshops that typically attract ninety to 120 eighth-graders and from forty to sixty high school students.

"In 2005, I became concerned about the lack of females enrolled in the College of Engineering, which at the time was only 7.6 percent of the students," Schmieding says. "I also felt the solution to the problem of declining female enrollment was to find a way to excite and encourage girls to study math and science, and to ultimately pursue a degree in one of the engineering majors."

Schmieding's efforts have been paying off for the College.

"Our male enrollment is holding steady," Reid says. "Our increases in enrollment the past few years have come through female enrollment."

Dana Hess

DEAN'S CLUB

January 1, 2011 through January 31, 2012

Leon D. Crossman
Dieter W. Proehl
Dale A. and Barbara A. Haack
Maynard A. and Sharon D. Nagelhout
Allan F. Nereim
Peter W. Neyhart
A.J. Van Dierendonck
Charles L. Waggoner

CLASS OF 1962
Delvin D. and Athene M. Eberlein
Errol P. EerNisse and Sonja Chesley
David L. Juttelstad
Dennis F. and Marlys J. Satterlee
Dale M. Stevens
LaDell R. and Phyllis L. Swiden
Jerald A. and Nancy Tunheim

CLASS OF 1963
James A. and Sandra L. Hembd
Duane L. McDonnel
Howard and Norma Nielsen
Thomas D. and Marilyn F. Novotny
Vernon L. Trimble
Myron R. and Joan K. Van Buskirk

CLASS OF 1964
David R. and Peggy M. Blegen
Cameron G. and Nancy C. Kruse

CLASS OF 1965
Gene A. and Diane Johnson
David L. and LaVonne I. Kurtz
Dennis R. Little
Glee G. Lyon
Ronald W. Mielke
Richard J. Monhardt
R. Craig and Carolyn A. Schnell
Allen M. VandenHoek
Sidney P. Williamson

CLASS OF 1966
Jerry L. and Nancy J. Cotton
Kenneth D. and Marlys Knuth
Frank W. and Carolyn J. Roitsch
Dwayne A. and Helen L. Rollag
Dennis W. Ryland

CLASS OF 1967
Gladys Bahnson
Keith A. and Glynn E. Bartels
Stephen and Karen Rudd
Arden B. and Lavonne K. Sigl

CLASS OF 1968
William L. Gamble
Jerome D. Heeren
Dennis B. and La Donna Micko
Robert and Karen Nelson
Thomas R. and Michele Olsen
Lynn G. Seppala
Richard A. Svanda

CLASS OF 1969
Patrick J. and Joan Cannon
Neal D. Drefke
Larry P. and Barbara J. Gunderson
James W. Mentele
Jim and Dorothy Morgan
Ed A. Parkhurst
Roger D. and Karen Y. Pavlis
Richard A. Phillips
Thomas H. Reiners
Joe H. Schricker
Wesley G. and Lois J. Tschetter

CLASS OF 1970
Delwyn D. and Clara M. Anderson
James B. Bakkedahl
Richard R. Bell
Gayland J. and Carolyn Bender
Duane D. Boice
Michael A. Bucher
Arlo B. and Barbara DeKraai
Joseph M. Fergen
Craig A. Larson
Glen D. Middleton
Carl L. Murra
Virgil A. Paulson
Jon A. and Cheryl K. Rippke

CLASS OF 1971
Darrell D. and Vicki K. Larson
Jeffrey L. and Trudiann Nelson

CLASS OF 1972
Gary L. Bliss
David E. and Barbara A. Christianson
James J. Corothers
Steve J. Flanagan
Donell P. and Janice M. Froehlich
William C. Healy
Larry D. Merritt
Tate Profilet and Mary J. DeJong
Harlan J. and Janice E. Quenzer
Thomas L. and Susan L. Thelen
Vernon P. and Cathrene M. Voelzke

CLASS OF 1973
David A. Anderson
Richard C. Gustaf
Gordon D. Niva and Susan A. Lahr
Steven F. Oakland
Rodney C. H. Scheel
Kenneth O. Zoellner

DEAN'S CLUB

January 1, 2011 through January 31, 2012

CLASS OF 1974
Steve W. and Jean Brockmueller
Edward and Judy Cannon
Bruce G. Haggar
Dale A. and Diane Jans
Daniel R. and Nancy K. Kenyon
Loren M. and Susan J. Steenson

CLASS OF 1975
Ralph E. Lindner
K. John McNellis and Paul D. Conrad
Raymond C. Peterson
Allen F. Schmit
Mark A. Sippel

CLASS OF 1976
Brian A. Borgstadt
Larry D. De Mers
John G. Kappenman
Russell G. and Nancy K. Lampy
Vaughn K. Jensen and Susan L. Moe
William J. Strandell
James C. and Doniese M. Wilcox

CLASS OF 1977
Gary L. and Donna R. Dettman
Bruce A. and Debra J. Jennings
M. Thomas and Margaret Kelly

CLASS OF 1978
Steven L. Berg
Delvin E. and Davonne R. DeBoer
Mark C. and Sharon K. Hasvold
Sue E. Mabee
Gregory D. and Karen J. Miller
John H. and Joy E. Mills
Vernon R. and Ruth A. Schaefer
Rebecca S. Schmieding

CLASS OF 1979
Robert C. Schmidt

CLASS OF 1980
Kurt L. Hansen
James G. and Susan K. Nachtigal
Mark W. and Katherine K. Rau

CLASS OF 1981
Jeffrey A. Bjorkman
Carey L. Bretsch
Byron G. Garry
Dean H. Johnson
Peter P. Lee
Mark T. and Kathryn A. Walker

CLASS OF 1982
Jay and Lisa Bender
James O. and Rita M. Edwards
David M. and Shelley R. Frazee
Loren D. Tjoland
Diane M. Wilaby

CLASS OF 1983
Timothy T. Amert
Lori S. Bocklund
Kent L. Hofer
Tom Josten
Gordon J. and Mary L. Tolle

CLASS OF 1984
Lewis F. and Danelle M. Brown
Brian J. and Carla S. Gatzke
Brian A. Schuelke
Gregg E. and Kathryn A. Stedronsky
Stuart A. Wahlstrom

CLASS OF 1985
Andrew J. and Angela K. Barnett
Regg A. and Barbara J. Glawe
Seth T. and Ann M. Hansen
Paul and Rita A. Lutgen
Daniel L. Raap

CLASS OF 1986
Tim and Suzette Burckhard
Stephen M. Everson
Lyle P. and Melissa S. Mangen
Blair A. Metzger
Wayne A. Stowsand

CLASS OF 1987
Brent L. Bargmann
Scott A. Dooley
Michael R. Harms
Reece A. and Kami L. Kurtenbach
Carl E. and Carol C. Larson
Joel C. Poppen
Donald A. Ufford

CLASS OF 1988
Theresa E. Brandner-Allen
Michael R. Heier
Kevin L. Moe

CLASS OF 1989
Tim S. and Mary K. Reed

CLASS OF 1990
Carmen C. Kasner

CLASS OF 1992
Jon R. and Wendy A. Brown
Matthew J. and Melissa Kurtenbach
William R. and Pamela J. Lohr
Michelle L. McCarville
Brian J. and Jamie L. Mundt
Timothy A. Ruggles

CLASS OF 1993
Mark D. Glissman
Jill T. LaPlante

CLASS OF 1996
Jason L. and Jodi L. Devine
Joe and Heidi L. Oetken
Drew P. and Kathy L. Schellpeper

CLASS OF 1998
Tanya L. and Timothy Miller
James M. and Alison R. Toulouse

CLASS OF 1999
Michelle M. Kelly
Doug T. and Katie C. Pfeifer

CLASS OF 2003
Steven Rames & Marysz Palczewski-Rames

CLASS OF 2004
Justin Benson

CLASS OF 2005
Jay E. Tolle

CLASS OF 2006
Paul C. Bezdicek

CLASS OF 2007
Adam S. Goblish

FACULTY
Gerald E. and Shirley Bergum
Kurt D. Cogswell
Douglas W. and Teresa J. Hall
Daniel C. and Michele A. Kemp
Richard A. and Kathy K. Reid
Duane E. and Phyllis Sander
Louis G. and Mary Ann Skubic
James and Joanne Skyberg

FRIENDS OF THE COLLEGE
Loren and Mavis Amundson
Kelly L. Biddle
Preston C. and Patricia Haglin
Delores L. Koepsell
Vivian E. Ruch
Donald K. and JoAnn Rursch
Lela F. Sandfort
Paul E. Schellpeper
Ronald D. and Jeanne Schultz
Joseph D. and Lynne C. Williams

BUSINESSES
3M - Brookings
3M - Matching Gifts
Abbott Laboratories Fund
AGCO Corporation
Alcoa Foundation
American Council of Engineering Companies of SD Inc.
Associated Consulting Engineering Inc.
Associated General Contractors of SD-Building Chapter
Balancing Professionals Inc.
Ball Corporation
Banner Associates Inc.
Bartlett & West Inc.
Basin Electric Power Cooperative
Black Hills Utilities Holdings LLC
Bolton & Menk Inc.
BTU Engineering Inc.
Capital Card Services Inc.
Henry Carlson Company
Carollo Engineers
Caterpillar Foundation
Citigroup Foundation
Civil Design Inc.
Climate Systems Inc.
Concept Sales Inc.
Cooper Industries Foundation
Cooper Power Systems
Dacotah Bank - Aberdeen
Daktronics Inc.
Donohue & Associates Inc.
Dow Corning Corporation
EAPC Architects Engineers
East River Electric Power Cooperative
Eastern Chapter South Dakota Engineering Society
Engineering Technical Services
ExxonMobil Foundation
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The First National Bank in Sioux Falls
Fishback Financial Corporation
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HR Green Inc.
Heartland Consumers Power District
Hormel Foods Corporation
Horton Inc.
IBM - New York
IBM Corporation
Ingersoll-Rand Company
Johnson Controls Inc.
Johnstech International
Lamp, Rynearson & Associates Inc.
Midwest Glass Inc.
Mills Construction Inc.
Minnesota County Engineers Association
Minnesota Power
Missouri River Energy Services
NorthWestern Energy
Northern Plains Power Technologies
Otter Tail Power Company - Fergus Falls
P & M Steel Company
Poet
D. W. Proehl Construction Inc.
SAE Foundation
Scott Materials Group Inc.
SDN Communications
Shell Oil Company

Phonathon

Engineering Phonathon nears 30th birthday

For nearly thirty years, SDSU engineering students have been calling their predecessors for financial support.

In the early days, students called from the third floor of Wenona Hall. Then the phone company set up a bank of phones in the basement of Pierson Hall, where sixty students per shift gathered to call out on rotary dial phones. Today, computer-enhanced calling from the SDSU Foundation's Calling Center links current and former students.

As has been the case since 1983, the Phonathon provides vital funding for student activities.

The twenty-ninth Phonathon was completed this winter (January 28 to February 4) with 934 donors contributing $143,370.

Students call graduates in their discipline. For example, construction management students call construction management graduates. That allows students to do a bit of networking in their profession and has resulted in internships for the callers.

Dean Lew Brown says, "It's an annual tradition of the College of Engineering. We get a lot of student involvement."

But that is as it should be because the Phonathon proceeds go right back to the students.

Dollars aid student projects

Department Head Kurt Bassett says, "Besides scholarships, the Mechanical Engineering Department uses the Phonathon funds for supporting student projects and activities, design contests like the SAE Formula Car, and student leadership development.

"This includes supplemental operating funds for each of our four professional student branches. Also, we provide travel funds for students and advisors to attend regional and national meetings of the technical societies.

"Because a significant number of M.E.'s are members of the Society of Women Engineers, the Alpha Omega Epsilon Engineering Sorority, and Engineers Without Borders, we provide funds to supplement their activities as well."

Department Head Kurt Cogswell says, "The Math/Stat Department uses Phonathon dollars only in ways that will contribute directly to student learning.

"In recent years, Phonathon dollars have helped fund a field trip to Argonne National Laboratory, and funded the creation of a math majors' lounge near faculty offices that sees heavy study group use. Neither would have been possible without Phonathon dollars."

Uses now includ scholarships

The Phonathon has become an important vehicle to help fund the $1,000-per-year Jackrabbit Guarantee Scholarships for engineering students.

It was rotary-dial phones, and pen and paper in the early days of the Phonathon. Today, calls are made with computer-enhanced equipment at the SDSU Foundation's Calling Center. Callers, such as David Schiller, (pictured) graduate and join the alumni base, which include 1936 graduate Emmett Myhre. Schiller talked with Myhre in 2009. Today Myhre is 101 and still donating.

Any first-time student who earns an ACT score of twenty-four or higher and attends classes on the Brookings campus is eligible. By maintaining a 3.0 grade point average (2.8 for freshmen) and completing thirty credits in the fall and spring semesters, the scholarship is renewable.

Steve Erpenbach, chief executive officer of the SDSU Foundation, says, "When the scholarship program was launched in 2002, it was estimated that about 500 incoming freshmen [universitywide] would qualify for the Jackrabbit Guarantee. Last year, nearly 1,000 incoming freshmen qualified."

The Jackrabbit Guarantee is particularly valuable to the College of Engineering, Dean Lew Brown says. For the current school year, 528 of the College's 1,430 students are receiving the scholarship.

"It has helped lift our enrollment and is a good recruiting tool," Brown says.

The rising number of eligible students makes the College and the SDSU Foundation even more thankful for hundreds of dedicated alumni.

Brown says, "For nearly three decades, our alumni have shown their pride in the College and its mission by supporting current students through the Phonathon. The donations allow our students to participate in activities that really make their time here at SDSU memorable."

Engineering students who receive a Jackrabbit Guarantee Scholarship that isn't supported by a named sponsor now has that scholarship partially funded by Phonathon dollars received by the student's department.

Beginning this year, 60 percent of Phonathon dollars go to Jackrabbit Guarantee Scholarships with the remaining 40 percent going to department discretion. All funds donated to a department stay in that department, either in the form of scholarships or other uses.

Economy, cell phones affect Phonathon

This year's Phonathon raised $143,370, which was shy of the goal of $175,000, Phonathon chair Ken Lewno says.

He cited two factors—an economy that is still far from robust and changing lifestyles. "People aren't using home phone numbers any more. There's a gap in getting ahold of people. It's a challenge that has to be addressed by the University as a whole," Lewno says.

However, he said the Phonathon was marked by dedication—of the alumni and the student callers.

The donors again included Emmett Myhre, the 1936 civil engineering graduate from Kalispell, Montana, as well as 933 others. There were 124 student callers, including a dozen who took multiple shifts. Most shifts were three hours.

The thirtieth annual Phonathon is January 26 through February 2, 2013.

Dave Graves

A decade of giving

2012 - $143,370
2011 - $148,000
2010 - $141,875
2009 - $145,282
2008 - $175,904
2007 - $177,935

Meeting expectations

Storry shapes story of stellar grad Scheel

Nearly forty years ago, Rod Scheel was a part of history—participating in the first graduation ceremony in Frost Arena in May 1973.

The North Dakota native remembers the ceremony well. But what he remembers is not Governor Richard Kneip's message, the honorary doctorate to David Doner, or President H.M. Briggs handshake.

Rather he remembers a rather routine part of the ceremony—the dean's introduction of the graduating class of engineers.

"I will never forget, and only wish an audio recording existed, of the May 1973 graduation ceremony in Frost Arena when Junis was introducing the graduating class of engineers.

"[Dean Junis Storry] said, 'Will the graduating class of engineering students for 1973 please stand. Ladies and gentlemen, these students will take the education they have received and make this world a better place to live for all of mankind,'" Scheel clearly recalls.

Reflecting, Scheel observes, "What a powerful statement of the impact an engineer will have on life for others. What a commission to impose on the graduates. I have never forgotten what Junis believed I needed to do in this life with my engineering education."

An Otter Tail institution

A look at Scheel's resume shows that Storry's words truly were taken to heart.

After receiving his master's degree in power engineering, Scheel headed back north, starting work as an engineer with the system protection department for Otter Tail Power Company in Fergus Falls, Minnesota. He has been with Otter Tail, a generation and transmission, investor-owned utility, ever since.

By 1995, he was vice president of electrical and since 2002 has been vice president of asset management.

Knabach award winner

In October 2011, Scheel was honored by the SDSU Center for Power Systems Studies with the Wayne Knabach Excellence in Power Award. Knabach, an electrical engineering professor at SDSU from 1957 to 1995, was Scheel's thesis advisor.

"Wayne was and is a practical thinker with excellent understanding of the mathematical and science principles that influence engineering decision making. Wayne could take what appeared to be complex engineering problems and make them clear enough for the students to find solutions.

"Wayne had a personal life of faith in God that paralleled mine. I found someone I trusted, someone who expected me to work hard and smart, and someone who expected me to make a difference in the world," Scheel says.

He has been hooked on electronics and technology since he was six, when his father showed him how radio signals could be detected. "I am living the dream and in business I am living ten to twenty years ahead," Scheel says.

He lives decades ahead because his job is to oversee maintenance of current assets and plan construction of future assets.

Power line plans

"Much of my time is spent providing general guidance and direction for Otter Tail Power Company management in developing new agreements [with other utilities] and new investments.

"CapX2020 is the first major upgrade of the transmission infrastructure in the region in thirty years. An example of a CapX2020 project in South Dakota is the CapX2020 – Brookings 345 kV project northeast of Brookings. We estimate that Otter Tail will invest an additional $140 million in CapX2020.

"In another set of projects, Otter Tail also is working with utility neighbors to develop with another 345 kV line to Brookings and a 345 kV line to Ellendale, North Dakota, with an Otter Tail investment of $250 million," Scheel says.

It is expected to be 2019 before all of these projects are complete. Planning for the lines began more than ten years ago.

Lifeline still energized

Hence, as a utility engineer, today's work shapes the flow of life decades away.

> **"These students will take the education they have received and make this world a better place to live for all of mankind."**
>
> —Spoken by then-Dean Junis Storry at Rod Scheel's graduation in 1973

At 63, Scheel says his personal power plant is still generating plenty of energy.

"My future plans are to make sure that CapX2020 succeeds and that construction of Big Stone Area Transmission [a project to use the route permits for a now-abandoned power plant expansion] gets underway in a few years to enable more economical use of area generation and delivery of wind energy to large metropolitan areas," he says.

It's all part of fulfilling Storry's commission to "make this world a better place to live for all of mankind."

Dave Graves

Scheel's story

POSITION: Vice president of asset management, Otter Tail Power Company

DUTIES: Oversees the engineering expertise to plan, engineer, operate, and maintain about $140 million of transmission assets (the major power lines crossing our Minnesota, North Dakota, and South Dakota service area) and $225 million of distribution assets (the poles, wires, and substations in the communities).

EDUCATION: West Fargo High School, 1967; North Dakota State, electrical and electronic engineering, 1971; South Dakota State, master's in power engineering, 1973.

WHY SDSU: "The Center for Power Systems Studies at SDSU offered an excellent education, fellowships funded by area utilities funded my tuition and other direct costs, and my summer jobs covered my living costs."

SDSU MEMORY: "My [Scobey Hall] dorm mates and I hunted pheasants together, snitched apples from the old McCrory Gardens, walked to Medary Commons, and hoped on the way to Medary, as we cut behind Wecota and Waneta Annex, that we might run into one of the favorite ladies that stayed in Wecota or Waneta Annex."

FAMILY: Wife – Jo; four children – Lindsey Joy, Courtney Jo (Luke) Draxten, Jesse, and Abby Jaclyn (Brandon) Crowser.

Hobo Day 2011

With a theme of "Night of the Living Hobos," Hobo Day parade floats were macabre, including this second-place entry from the Construction Management Club. The 2012 Hobo Day on October 27 will mark the 100th Hobo Day.

A grave-opening entry by the Mechanical Engineering students placed third in the November 5 parade.

Distinguished Engineers, Alumni

College of Engineering graduates Arlo DeKraai and Jeff Nelson were among eight people honored by the SDSU Alumni Association at Hobo Day 2011.

The thirty-sixth class of Distinguished Engineers brought three more plaques to the Wall of Fame in Crothers Engineering Hall, bringing the total to 128 persons since the award was initiated in 1977 by Dean Junis O. Storry. To be honored at a May 1 banquet will be civil engineering graduate Dale Jans '74 and electrical engineering graduates

ARLO DEKRAAI
PROFESSIONAL ACHIEVEMENT

A 1970 civil engineering graduate from Brookings, DeKraai, of Tulsa, Oklahoma, has become a symbol of industrial success.

During his career, he founded ten companies and was involved in more than fifteen acquisitions and startup divisions. The companies were involved in the design and construction of state-of-the-art manufactured products, most of which support the oil refining business.

In 1994, he founded Integrated Service Company (InServ), a Tulsa-based downstream oil and gas construction, turnaround, maintenance, and turnkey projects company.

As chairman, president, and CEO, InServ was transformed into a global leader, working in more than fourteen countries with more than $400 million in revenue.

This is the second time for DeKraai to be honored by SDSU. In 2005, the College of Engineering selected him as a Distinguished Engineer, an honor for which recipients must be approved both by a panel of college faculty as well as a panel of past recipients.

In a 2005 letter, Fred Stiers, general manager of ConocoPhillips, wrote, "Arlo sets high standards and stretch targets like all successful business people do. At the same time, he conveys confidence in his people's ability to reach these goals: never loud or boastful, but rather in his natural manner of quiet, reassuring leadership."

At InServ, DeKraai expanded its ownership to include eighteen employees, and its stock rights program enabled an additional 139 employees to participate in the proceeds of the November 20, 2007, sale of InServ to Willbros Group.

That serves as an example of DeKraai's generosity and his desire to share with others, according to business partner Clayton Hughes.

DeKraai married Barbara Conn in 1968 while attending SDSU. They have two daughters, Laura Cardinal and Stephanie Stump, and seven grandchildren.

JEFFREY L. NELSON
PROFESSIONAL ACHIEVEMENT

Nelson, a 1971 electrical engineering graduate, started work for East River Electric Power Cooperative after he finished his three and one-half-year commitment to the U.S. Army in 1974 and has been there ever since, being promoted to general manager in 1990.

In addition to overseeing a wholesale power distribution entity serving 40,000 square miles, he has been a strong supporter of renewable fuels development in the state and played a key role in establishing the South Dakota Value-Added Agricultural Development Center.

Stephanie Herseth Sandlin wrote, "I count myself among the many fortunate individuals who have had the opportunity to work with Jeff Nelson over the years . . . Jeff was a valuable resource to me when I served in Congress."

John Thune wrote, "While serving in Congress, I have had the opportunity to work with Jeff . . . on a host of issues important to South Dakota. Whether it be ensuring his customers receive affordable and quality energy through preference power, expanding the utilization of wind energy, or growing our state's renewable fuels capability through the development of the ethanol industry, I have welcomed his guidance and leadership."

East River Electric is a wholesale power cooperative providing electricity to twenty-four retail electric cooperatives and one municipal retail electric system, which in turn serve more than 92,000 homes and businesses in forty-one eastern South Dakota counties and twenty-two counties in western Minnesota.

Nelson's civic work includes organizing the Lake County Food Pantry and being a charter member of the East Central South Dakota Habitat for Humanity. In 2009, he received SDSU's Distinguished Engineer Award.

Nelson and his wife, Trudiann, live at Lake Madison. They have two children, Erik Nelson and Kate Hanson.

DALE A. JANS

Jans grew up on a ranch near White River, and graduated as valedictorian from White River High School in 1970. He graduated from SDSU in December 1974 with a degree in civil engineering.

Less than eight years later he was operating his own design/build construction company in Sioux Falls. Jans Corporation began in 1973 under the name of Nioda Builders and specialized in design/build construction, utilizing pre-engineered building systems. Jans joined Nioda in 1975 as a construction manager and left two years later to become a partner in a construction firm in Sioux City, Iowa.

In 1982, Dale returned to Sioux Falls and purchased Nioda Builders. At that time the company diversified into other types of general contracting. In 1984, the company name changed to Jans Corporation.

Today, Jans Corporation continues to be one of the larger commercial construction companies in the state with Jans as the majority owner and president.

Jans Corporation was awarded a National Build America Award from the Associated General Contractors of America in 2010 for designing

Butterfly House. To date, Jans Corporation is the only construction company in South Dakota that has received this prestigious award.

As a college student, Jans was on the dean's list, president of the student chapter of the American Society of Civil Engineers, and a member of Chi Epsilon fraternity, the national civil engineering undergraduate honor society. While president of ASCE, the chapter completed a concrete hyperbolic paraboloid picnic shelter just north of Young Hall.

In 1973 he married Diane Carlson in Claremont. They have three children—Brad, Erin, and Brian— who are all graduates of SDSU in civil engineering or construction management. Brad's wife, Sheri, is also an SDSU graduate.

At a national gathering in Providence, Rhode Island, August 26, 2011, Jans was installed as the president of the National Council of Examiners for Engineering and Surveying, a national nonprofit organization dedicated to advancing professional licensure for engineers and surveyors.

He was fortunate to have all of his family including his wife, three children and their spouses, his nine grandchildren, and his brother and sister, also SDSU graduates, in attendance.

BETH M. KASPAR

Swimming against the current in her collegiate days helped Beth Kaspar have the strength to succeed in the U.S. Air Force and beyond.

The daughter of Art and Signe Anderson of Brookings, Kaspar was an All-American swimmer during the early days of the SDSU women's swimming program. The 1980 electrical engineering graduate also was enrolled in a program that was overwhelmingly male.

"In my freshman year there were about five or six women electrical engineering students. By my sophomore year there were just two of us. So I did contemplate changing degree tracks, but I had a four-year ROTC scholarship in engineering so I stuck with it," she says in a 2011 interview.

That tenacity paid off after receiving her commission as a second lieutenant in January 1981.

During her twenty-four year Air Force career, she rose to the rank of colonel and gained distinction with distinguished graduate honors for junior officer training courses such at Squadron Officers School, Air Command and Staff College and Joint Warfighting School.

Her 2001 Air War College thesis, *The End of Secrecy? Military Competitiveness in the Age of Transparency,* received recognition from the Air Intelligence Agency and was used as source material for George Washington University classes.

After retiring from the Air Force in 2005, Kaspar joined the Department of Defense as a senior leader, specializing in procurements and acquisitions.

In 2008, she received the Director's Leadership Award and in 2009 she received a Presidential Rank Award for Distinguished Service. In addition she was part of a four-person group recognized by the Congressional Senate Select Committee on Intelligence for extraordinary service.

Currently, she is program director for Special Programs, High Performance Computing Directorate of the National Security Agency.

During her career as a program manager, she has led large teams in building technologically advanced world-class systems.

Those duties include overseeing all aspects of analyzing, designing, building and fielding. So in addition to software and hardware engineering, Kaspar is responsible for business performance and contract processing, environmental modification, and communicating with program stakeholders and sponsors.

Three systems are credited to her—a tightly coupled inertial/GPS guidance system for missiles and aircrafts, a fighter targeting system, and a custom high-performance supercomputing system.

CURTIS BRUDOS

Brudos, a 1958 electrical engineering graduate from Lake City, retired from Lockheed Martin, Denver, in 1998 as the director of ground systems after serving that company and it's predecessor, Martin Marietta, for twenty-seven years.

The Sisseton High School graduate led teams at Martin Marietta that developed a new line of business for the company in command, control, communications, and intelligence. Brudos was information systems director at the corporate headquarters of Martin Marietta and Lockheed Martin in Bethesda, Maryland, from 1990 to 1995.

He was the director of several programs within Martin Marietta Denver Aerospace. He was awarded the Martin Marietta Jefferson Cup for the second time in 1982 for the successful acquisition of new business in the field of tactical command, control, and communications systems for the nation's armed forces. The Jefferson Cup was awarded annually for outstanding performance to about fifty individuals from a corporation of 41,200 employees.

He led the company's efforts on a monitoring system at the Kennedy Space Center in Florida that was used for checkout and launch of the Space Shuttle for thirty years.

While managing a central department of 100 engineers, he led efforts to win a new program at the Jet Propulsion Laboratory for spacecraft electronics, marking the beginning of a new line of business for Martin Marietta.

He received the Jefferson Cup Award the first time in 1973 for the successful completion of the Viking automated system test equipment used in Denver and the Kennedy Space Center. The two Viking Landers were the first spacecraft to travel to Mars, make a soft landing, and conduct science experiments related to searching for life. Both Viking Landers were launched in 1975, landed in 1976, and operated for years returning valuable scientific data.

He worked in the defense and space electronics business for twelve years before joining Martin Marietta. As a result of developing the first digital color television system at RCA in the 1960s, he was awarded two patents.

Brudos received his master's degree in engineering in 1965 from UCLA. In 1959 he married Phyllis Lakson, an SDSU English graduate and a Belle Fourche native. They have three daughters—Cheryl Wills, Kimberly Squire, and Deborah Fieldman.

Brudos served on the SDSU Foundation board from 1999 to 2008.

Tickets for the College of Engineering Awards banquet are available from the dean's office in the College of Engineering (605-688-4161). The tickets, which will be available until April 20, cost $17 for adults and $14 for students.

Alumni News

SKRISTIN BISGARD '96/'98 received the American Water Works Association's George Warren Fuller Award in June 2011 for leadership and contributions for advancing the water works practice in South Dakota.

The award is presented annually from each section of the national association for distinguished service to the water supply field. Bisgard has served as South Dakota section trustee and section chair for the South Section of the AWWA.

She is project engineer in the water resources department in Banner Associates' Brookings office.

GERALD BLAZEY '80 received a two-year appointment in June 2011 to work in the White House Office of Science and Technology Policy located in the New Executive Office Building near the White House. He has been at Northern Illinois University since 1996.

As assistant director for physical sciences, Blazey will be responsible for working on physical science policy issues throughout the federal government.

After Blazey earned his bachelor's in mathematics and physics, he earned a doctorate in physics from the University of Minnesota in 1986.

Civil Design Inc., a Brookings firm headed by **CAREY BRETSCH** '81/'90, was tabbed as No. 5 on *Construction Digital* magazine's list of top ten international engineering firms.

Civil Design, with 14 employees, is a full-service civil engineering and land-surveying firm. Their specialties are land surveying, environmental and transportation engineering, and residential, commercial, industrial, and athletic site design.

Its engineers concentrate their work in the Midwest.

Bretsch says, "To be in the company of such impressive and well-respected engineering firms, such as KBR with 35,000 employees in forty-five countries, Black & Veatch, a company with $2 billion in revenue, and ARUP Group, who designed the Sydney Opera House, is a tremendous privilege."

Construction Digital, which published the list in September 2011, does not solicit entries for the distinction; instead, it researches companies that are the best of the best in the industry based on specific qualifications.

KEVIN BROCKMUELLER '09 married Kyndra Bargfrede December 18, 2010, at Salem Lutheran Church in Jackson, Minnesota. The groom, originally of Sioux Falls, is a project manager with Paradigm Construction, Sioux Falls. The couple lives in Crooks.

TRENT BRUCE '00 was promoted this summer by DeWild Grant Reckert and Associates to manager and civil engineering sector leader for its Sioux Falls office.

In the position, Bruce has overall responsibility for office operations and is the lead engineer for civil engineering services to the Sioux Falls area markets. He has more than ten years experience in municipal civil engineering as well as working with private developers.

The National Guard major returned earlier in 2010 from a one-year tour of duty in Afghanistan.

ZACH CARTER '99, a defensive lineman in his days with the Jackrabbits, was among the fifty players selected on the All-Coughlin-Alumni Stadium Team, which was announced in August 2011 to mark the fiftieth year of the football stadium.

One of the first graduates of the construction management program, Carter is on a three-year assignment as the project manager for B.L. Harbert International, which is constructing an $800-million, design-build project for the U.S. State Department in Islamabad, Pakistan.

He is living there with his wife, Sara, and two sons, Glenn and Garrett.

JORDAN CHRISTENSEN '09 married Sierra Drey August 21, 2010, at Trinity Evangelical Lutheran Church in Winner.

The groom, originally of Flandreau, earned a degree in construction management and works for Foley Company, a specialty contractor based out of Kansas City. The couple lives in Dell Rapids.

JOHN EBBINGA '02 died June 28, 2011, at Morningside Heights Nursing Home in Marshall, Minnesota, after a seven and one-half year battle with West Nile Virus.

Ebbinga, 32, was an Elkton High School graduate who earned his bachelor's in electrical engineering.

Survivors include his father and stepmother, Bill and Linda Ebbinga, of Griswold, Iowa, and four siblings. He was preceded in death by his mother, Joan Ebbinga.

MATT GILL '09, a native of Pierre, is the new math teacher at Miller Junior/Senior High School. Last year he taught at Grant-Deuel in Revillo.

RICK AND TWILA HARTFORD became grandparents when Owen Gray Downie was born July 1, 2011, in Cornelius, North Carolina. Hartford, a 1979 mechanical engineering graduate, is a senior sales manager for General Electric, for whom he has worked for thirty-two years. The grandparents live in Hickory, North Carolina.

MIKE HEADLEY '92 became director of the Sanford Underground Laboratory in Lead October 1, 2011. The Brookings native earned his bachelor's degree in computer science, and he has a master's degree in business administration from Loyola Marymount University.

Headley joined the Sanford Underground Laboratory in 2008 as deputy lab director. He also served as acting project director and facility project manager, working with both Sanford Lab staff and with the scientists and engineers who designed a

proposed national laboratory at the former mine.

Headley is the grandson of former SDSU President John Headley, who served from 1952 to 1957.

MATTHEW HILLMAN '10 married Tanya Erickson September 25, 2010, at Southern Hills United Methodist Church in Sioux Falls. The mechanical engineering graduate is a corporate engineer at Daktronics in Brookings. The couple lives in Sioux Falls.

SARA A. HORNER '99 married Thomas Norstrom November 11, 2011, at Saint Michael's Parish in Sioux Falls. The bride, originally of Harrisburg, is an electrical engineer with West Plains Engineering, Sioux Falls. The couple lives in Harrisburg.

RYAN JERVIK '10, originally of Sioux Falls, married Jennifer Simmons December 18, 2010, at Our Savior's Lutheran Church, Sioux Falls. The mechanical engineering graduate is an engineer-in-training at Climate Systems Inc., Sioux Falls. The couple lives in Sioux Falls.

JARED JONES '10 married Allison Fink June 11, 2011, at Zion Lutheran Church in Delmont. The groom, an ag engineering graduate, is a mechanical engineer with Raven Industries in Sioux Falls. The couple lives in Colton, his hometown.

PATRICK KAPPENMAN '60 died June 23, 2011, at Dougherty Hospice House, Sioux Falls.

Kappenman, 74, of Mitchell, earned a civil engineering degree. He worked thirty-seven years as a bridge, highway, and traffic engineer for the South Dakota Department of Transportation. He retired in 1997. In 2010, he and his wife, Carole, moved to Brandon.

Survivors include his wife, two daughters, Cari Conden, of Avondale, Arizona, and Gayle Meehan, of Watertown; and a son, David, of Pinedale, Wyoming.

TRAVIS KONDA, a 1998 (BS) and 2001 (MS) civil engineering graduate, is featured in *Our Mississippi*, an electronic newsletter published by the U.S. Army Corps of Engineers. Konda, 37, is a bridge erection engineer for HNTB Corporation, serving in a consulting role for the Minnesota Department of Transportation, which is building a new crossing over the Mississippi at Hastings, Minnesota.

The $120-million project began in October 2010 with all four lanes to be completed in spring 2014.

He tells *Our Mississippi*, "This is the third Mississippi River bridge I've worked on, but with the others, I wasn't on site. It was all numbers, drawings, and data points without a true sense of scale. Here, when you stand on the bank and look out, you feel tiny. When you are down in the cofferdam for the main pier under 37 feet of water, you feel vulnerable."

Konda, originally from New Effington, has been with HNTB since 2005 and is based out of Minneapolis.

RUSS MATTHYS '87, the city engineer for Eagan, Minnesota, was named the City Engineer of the Year in Minnesota by the City Engineers Association of Minnesota January 25. The surprise announcement was made at the annual City Engineer's conference in Brooklyn Center. The presence of his wife, Missy, and both sets of parents added to the surprise.

JORDAN MILLER '07 married Sarah Heim May 29, 2011, at Holy Spirit Catholic Church, Overland Park, Kansas, where the couple lives. The groom, an electrical engineering graduate originally from Montrose, works for Burns and McDonnell Engineering.

DEMETRIA (CRONIN) MOON '97 began work July 1, 2011, as principal of Huron High School. The math graduate had been serving as acting principal since March. The Huron native began teaching at HHS in 2000 and was named assistant principal in 2008.

DENNIS NAPTON '69 died February 10, 2012, as a result of a bicycle accident on his birthday in Chandler, Arizona.

Napton, 67, earned a degree in electrical engineering and worked for General Electric and Marathon Electric. He received a call to serve the Lord in 1978, graduated from Trinity Lutheran Seminary in Columbus, Ohio, and a doctorate of ministry from Chicago School of Theology.

He served parishes in Wisconsin, retired in 2008, and was splitting time between homes in Chandler and Sioux Falls.

HEIDI QUAIL'10 and **Daniel Ostrem** '08/MS'10 were married June 11, 2011, at Sinai Lutheran Church. The bride, originally of Sinai, was a math major who now is a substitute teacher in Great Falls, Montana, where the couple lives. The groom, originally of Centerville, is civil engineer with Natural Resources Conservation Service in Great Falls.

ERIC RAMSEY '05 married Erica Schroeder June 18, 2011, at St. Ann Catholic Church in Miller, the hometown of the couple. He is a telemetry engineer with Honeywell International in Kansas City, where the couple lives.

GENE SIEVE '90 is president of the 1,600-member strong Minnesota chapter of the American Council of Engineering Companies.

The mechanical engineering graduate is manager of Burns & McDonnell in

Dean Lew Brown, left, and Dick Gustaf pose in Gustaf's Ford Cobra in front of Crothers Engineering Hall August 11, 2011. The Distinguished Engineer, who heads TSP architects in Sioux Falls, made SDSU one of his summer jaunts. The car is a replica of 1967 Ford Cobra and was built by Gustaf in 1997-98. It is powered by a 428 Super Cobra Jet Ford engine that generates 400 horsepower.

"When I graduated, the job market was tight. I left my student position in project management at Daktronics to a position with a building contractor in Kansas City. I knew I wanted to come back to South Dakota, and I missed **the friendly atmosphere and the great employees**. In early 2011, I returned as a project manager. My experience as a student employee has been a major contributor to my success and helped me get to where I am today. It is a joy to be back at Daktronics."

Brian Vanorny, CM09, Transportation Project Manager

www.daktronics.com

DAKTRONICS

One goal reached, another on horizon

On April 27, Phase II of the Electrical Engineering and Computer Science Building will be dedicated.

It will be the latest accomplishment in a decade-long effort to address the College of Engineering's space needs that began with the 2001 renovation and expansion of Crothers Engineering Hall and the 2003 revitalization of Solberg Hall.

Phase II will be the latest, but not the last. Construction on another significant building project could begin in 2013.

The expansive Electrical Engineering and Computer Science Building is a high-profile project of It Starts with STATE: *A Campaign for South Dakota State University*. The campaign surpassed $180 million as of March 1; this is the beginning of the sixth and final year of the campaign.

The combination of private gifts and millions of dollars in resources from grant and contract work is transforming the campus. It Starts with STATE is already $50-million greater than any higher education campaign total in South Dakota history. Thanks to the more than 20,400 different donors who have responded, SDSU is on target to exceed the $200-million goal well within the six-year timeframe.

The 2012 goal for the College of Engineering is to raise at least $1.3 million more for its Engineering Building Fund. That will allow SDSU to seek approval for the Architecture, Math and Engineering Building, which will be attached to the west half of Solberg Hall.

During the 2012 legislative session, a plan was approved to allow SDSU to use $10 million of the Higher Education Facilities Fund (HEFF) to be blended with $7 million in private gifts. HEFF dollars come from 20 cents of every tuition dollar paid by students in the South Dakota public university system.

Please consider a gift or pledge to It Starts with STATE directed to the Architecture, Math and Engineering Building, scholarships, and faculty support. Regardless of the amount, it makes a difference. We need everyone's help to continue this transformative period at SDSU and the College of Engineering.

Tim Reed

DIRECTOR OF DEVELOPMENT

South Dakota State University
COLLEGE OF ENGINEERING
Crothers Engineering Hall
Brookings, SD 57007

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